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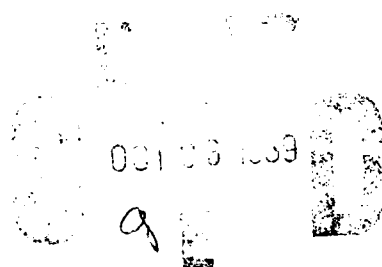
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Military and Civilian Stereotypes
for the Labels of Computer Keys

Elizabeth Zoltan-Ford

July 1989



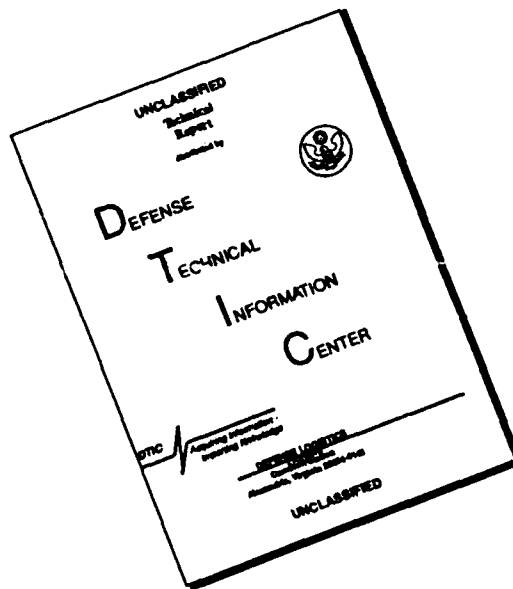
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Key words: population stereotypes, command names, computer labels, human factors, keyboards

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Abstract

Several researchers have tested for performance differences between subjects exposed to population stereotype and experimenter-generated text-editing terms. While the results of some of these studies indicate that stereotypical labels are superior, others do not. The present study sought to clarify this inconsistency by determining whether or not population stereotypes exist for computer functions.

Information was gathered from both military and civilian populations using both paper-and-pencil and computerized methods. The results indicate that few, if any, stereotypes exist for either population for the 20 keyboard functions examined. Implications for understanding past research and for conducting future research are suggested.

Military and Civilian Stereotypes for the Labels of Computer Keys

The selection of the most appropriate words and phrases to convey information in instructions and signs has always been a major concern of human factors specialists (Chapanis, 1965). Recent research on word selection has focused on the names that are or should be used to describe computer-related functions. Typical studies involve comparing the text-editing performance of two or more groups of subjects who have each learned different lists of text-editing terms. The external validity of the results of such studies is contingent upon the selection of the names used in the various to-be-learned lists (see, for example, Landauer and Galotti, 1984).

Consider, for example, the research of Grudin and Barnard (1984). Subjects in their study were randomly assigned to learn and then use five different lists of 10 text-editing functions. The five lists of functions were comprised of (1) specific names; (2) abbreviations; (3) unrelated names; (4) pseudowords; and (5) consonant strings. The action of deleting a character was described, for example, as (1) delete for the specific name list; (2) del for the abbreviation list; (3) parole for the unrelated name list; (4) ragole for the pseudoword list; and (5) fnm for the consonant string list. The rate of errors, strategies used to edit text, and rate of initial learning were found to be most efficient with the "specific name" list and least efficient with the "consonant string" list. This finding is not so surprising given the nature of the five lists of names. It would be more

surprising to find a computer manufacturer who marketed a text-editing system that used commands like "fnn" and "glb."

Another approach to determining the best labels for computer functions involves comparing subjects' performance with currently-used computer names to performance with population stereotyped names or labels. Population stereotyped labels are those labels that are the modal responses of given user or potential user populations. Numerous studies exist in the literature to indicate that people learn responses more readily, and perform them more reliably, when their natural, or stereotypical, expectations are met than when they are not. Furthermore, under moments of stress or fatigue, people revert to their natural mode of operation--that is to their stereotypical response. Thus, although it is possible to teach people to efficiently operate a system, computerized or not, that violates population stereotypes, they will most likely err when they are placed in a stressful situation (see, for example, McCormick & Sanders, 1982).

Two recent studies have examined subjects' text-editing performance with population stereotyped computer labels. Landauer, Galotti, and Hartwell (1983) randomly assigned their subjects to learn and use three text-editing function word lists. Each word list was comprised of three text-editing labels. Two of their three word-lists contained labels that realistically described the functions that the corresponding terms performed. The old, or currently used, list contained the words delete, append, and substitute; the new, or population stereotype, list contained the words omit, add, and change; and the random list

contained the words allege, cipher, and deliberate. After spending two hours accustoming themselves to the word lists, the subjects completed several text-editing tasks. The speed with which these subjects completed their text-editing tasks was not affected by the word-list to which they had been assigned. As the authors themselves caution, however, this finding should not be taken to mean that the selection of labels for computer-related functions makes little difference; rather, it may have been possible for these subjects to learn to use these particular sets of labels only because each set contained so few labels.

As in the Landauer et al. study, one of the text-editing word lists used in Scapin's study (1982) was comprised of population stereotyped labels (although the reader should note that the population was French speaking). Scapin had one-half of his subjects suggest labels for each of 13 text-editing functions. He then later compared this group of subjects' ability to recall their self-generated label list with a second group of subjects' ability to recall a list that he had generated. Scapin found that the stereotyped labels were recalled more accurately than were the assigned labels. The author noted, however, that the reason for the recall differences between the two groups is unclear. Although it is possible that the stereotyped responses were more easily recalled because they are more natural labels than are Scapin's assigned labels, it is also possible that the difference is a function of the generation process itself. Subjects in the stereotyped condition engaged in active learning as they generated their word list, whereas

subjects in the assigned condition underwent a more passive form of learning.

Before unambiguous performance comparisons can be made between population-stereotype and experimenter-generated labels, a comprehensive set of computer-related population stereotypes must be derived. The purpose of the present research was to obtain the population stereotypes for 20 computer keyboard functions from military and civilian populations. Keyboard functions were selected because they include not only those functions frequently used for text-editing tasks but functions used for other tasks as well. Furthermore, if one of the major reasons for studying people's stereotypical alternatives to the terminology currently used on computer systems is to remove "an important obstacle to beginning use of computer systems" (Landauer, et al., 1983, p. 495), there is no better place to start than with the part of the computer with which the user first interacts--the keyboard.

The computer-related population stereotype research to date has focused on examining one population at a time: students (Black & Sebrechts, 1981; Landauer, et al., 1983), housewives (Streeter, Ackroff, Taylor, & Galotti, cited in Landauer, et al., 1983), computer-naive adults (Grudin & Barnard, 1984) and computer-naive office clerks (Scapin, 1982). None of these aforementioned populations is likely to be exposed to as great a level of stress as are military soldiers. Because people revert back to their population stereotypical responses under extreme stress, the present research sought to determine the stereotypes for the military population. The civilian population (students)

was included to determine if (and if so, in what way) military stereotypes might be unique to that population. Direct comparisons with past research could not be made for two reasons: (a) stereotypes were sought for many computer functions not previously examined and (b) the results of prior studies have been found to be at least partially determined by the way the subjects are presented with the research situation.¹

The stereotype data was collected in two parts. During the first phase the subjects provided labels and evaluated their suggestions for each of 20 different computer keys using a paper-and-pencil questionnaire. During the second phase a different group of subjects provided the same information, but this time they did so as they interacted directly with a computer system.

The decision to replicate the questionnaire study with a computer study was made in recognition of the arguments of several population-stereotype researchers. Loveless (1962), for example, considers the population stereotype results gathered from paper and pencil methods to be invalid. He argues that the conclusion reached after asking people which way they would turn a knob may not be the way the knob would be turned if people actually had to turn it. He suggests that stereotypes be gathered in a reiterative process: develop, test, evaluate, and then redesign equipment prototypes. Smith (1981) and Brebner and Sadow (1976) argue that this prototype method is both more time-consuming and expensive than the paper-and-pencil methods. According to Smith, the prototype process can be simulated successfully using paper-and-pencil methods as long as the

information to be gathered itself involves the use of words. As Smith puts it, "if it is words themselves that are in question, then the arguable validity of predicting equipment use from questionnaire responses becomes irrelevant" (p. 307).

Part 1

Method

Subjects. A total of 165 subjects were asked to complete the population stereotype questionnaire: 93 military and 72 Towson State University undergraduate subjects. The military subjects were supplied by the U.S. Army Human Engineering Laboratory. The student subjects were obtained through advertisements to undergraduate introductory psychology courses. The responses of 13 military and 2 student subjects were not included in the final data analysis because the subjects had failed to follow the directions properly. These 15 subjects typically responded with words, phrases, and symbols that described the text of the example screens.

The remaining 80 military subjects ranged in age from 17 to 33 years ($M = 19$ years), were primarily male (69%) and privates (modal rank of E1); and typically had been in active duty for about 4 months. Only one military subject indicated that English was not the language he spoke most often and only five military subjects had not completed high school (75% responded that their last completed grade level was 12). About 78 percent of the military subjects had used a computer system at least once prior to this study.

The students ranged in age from 17 to 37 years ($M = 18$ years) and were primarily female (59%). Again, only one student

subject indicated that English was not the language he spoke most often and only one student subject had not completed high school (79% responded that their last completed grade level was 12). Approximately 95 percent of this sample had used a computer at least once prior to participating in the present study. None of the subjects were paid.



Materials. Subjects' computer stereotypes were assessed using a multiple-page questionnaire. The questionnaire consisted of 20 pages of BEFORE/AFTER pictures of computer screens where each page represented the actions of a different computer key. For each key, the BEFORE pictures presented text taken from popular magazines and newspapers (e.g., TIME and USA Today). The AFTER pictures displayed what that text would look like after that unidentified key had been depressed on a computer keyboard. The subjects were shown, for example, the following demonstration:

Here is a computer screen BEFORE a key is pressed:

The quick brown fox
jumped over the lazy dog.

AFTER the key is pressed, the screen looks like this:

.god yzal eht revo depmuj
xof nworb kciuq ehT

The 20 keyboard functions demonstrated with such BEFORE/AFTER pictures are listed in Table 1. Below each BEFORE/AFTER set of pictures were four questions. Two of the questions asked the subjects to provide labels that best describe what they thought the key does to the information on the screen. One of the labels was to be a word, phrase, or abbreviation (verbal label); the other label was to be a symbol or picture (symbolic label). For the example demonstration, shown above, the subjects were shown the verbal and symbolic labels "Print bkws" and " .

The space provided for responding to each verbal label was limited to two rows of six characters each, for a total of 12 characters. The decision to limit the length of the verbal labels was a pragmatic one. Standard computer keys measure 0.5 inches square (see, for example, Eastman Kodak Company, 1983). Given that the recommended recognition acuity angle (adapted from McCormick & Sanders, 1982) is between 0.2 and 0.4 degrees and that the typical viewing distance between user and keyboard is 28 inches, each letter on a key cap should measure approximately .13 inches. Similarly, given that the recommended minimal separable acuity angle is between 0.072 and 0.10 degrees, each letter on a key cap should be separated by at least 0.05 inches. Taken together, these measurements yield a maximum of two rows of six letters each per key.

Each BEFORE/AFTER page also contained a blank box of approximately 1.25 by 1.00 inches in which the subjects were to record their symbolic labels. In prior studies, subjects have been required to record only their verbal stereotypes. One of

Table 1

The 20 Keyboard Functions Included in the Questionnaire





Currently used label	Definition
Caps lock	Causes the alphabetical keys to display letters in their upper-case form
	Moves the cursor down one line
	Moves the cursor up one line
	Moves the cursor right one space
	Moves the cursor left one space
Delete	Removes the character to the left of the cursor
End	Moves the cursor to the end of the file
Help	Displays a menu from which selections can be made to obtain further information
Home	Moves the cursor to the beginning of the file
Insert	Allows a character(s) that is typed to be placed at the location of the cursor without removing the character already placed there
On/Off	Connects and disconnects the power to the computer
Page down	Displays the following page (screen) within the file

Table 1 - concluded

Currently used label	Definition
Page up	Displays the previous page (screen) within the file
Print screen	Causes the information on the screen to be printed onto paper
Return	Returns the cursor to the beginning of the next line
Scroll down	Displays the previous line of text by moving the text downward line by line
Scroll up	Displays the next line of text by moving the text upward line by line
Shift	Causes the alphabetical keys to display letters in their upper-case form as long as it is depressed
Tab	Moves the cursor to the right by six spaces
Undo	Causes the action taken immediately preceeding its depression to be negated

the most consistent findings from such studies also is the most troublesome for implementation. Subjects frequently offer words that, although familiar and easy to think of, lack specificity and hence could apply to two or more computer-related functions (Furnas, Landauer, Gomez, & Dumais, 1983; Landauer et al., 1983). Symbolic labels were included in the present study to test the notion that a plausible, more specific, stereotypical alternative exists for verbal labels.

Below the space provided for each label was a seven-point rating scale. Each scale ranged from extremely uncomfortable to extremely comfortable and was to be used by the subjects to rate the degree to which they felt their suggestions for the key-cap adequately described the key's actions.

Two sets of questionnaires were used. These sets differed only in the order in which the 20 BEFORE/AFTER examples were assembled. Each set's order was constructed randomly. Regardless of the set's order, the last page of each questionnaire contained a list of questions to elicit the background information needed to describe each sample (see Appendix A).

Procedure. The questionnaire data for both populations were collected in group sessions. All of the military subjects were assembled in a large auditorium on Aberdeen Proving Ground on the morning of 22 November 1986; the students assembled in smaller groups of between three and twenty subjects during the following two weeks.

Each group of subjects was told the purpose of the study and of their role within it, after which they were asked to complete

and sign an informed consent form. After the forms were collected, the two sets of questionnaires were distributed among the subjects randomly. The BEFORE/AFTER example then was used to demonstrate the specific questions to which each subject was to respond.

Following the example demonstration, the subjects heard and read a list of important reminders. The reminder list instructed the subjects (a) to note that there were 20 different keys to be labeled; (b) to pay special attention to the location and/or change in location of the cursor within each example (identified as "a little line that looks like this " _ " "); (c) to notice if and how the information in the examples changed and/or moved; (d) to use less than 12 characters for each verbal label if they wished but not to exceed the two rows of six spaces; and (e) to feel free to flip back and forth through the questionnaire and/or to change answers. Each subject was allowed to complete the questionnaire at his or her own pace; most subjects did so within one hour.

Results and Discussion

Verbal labels. The subjects' verbal responses were recorded verbatim and sorted alphabetically. The result of this sorting process is presented for each key separately in Appendix B in the order they were displayed to one-half of the subjects.

Examination of this table leads to two conclusions: (a) the number of unique verbal labels offered by the 80 military and 70 civilian subjects for each key is large and (b) no clear stereotype emerges for either population on any of the 20 keys.

Taking the subjects' responses at their face-value, no singular verbal label was offered by over 50 percent of either sample for any of the 20 keys.

For each sample, the greatest agreement occurs for the key-cap commonly labeled with " ← " (key 6). The most frequent response for both samples was "back space;" 29 percent of the military and 47 percent of the civilians offered this label. Given the lack of agreement within each sample, the verbal labels were reexamined for keyword similarity. It was observed, for example, that in addition to the 23 military subjects who offered "back space" for the " ← " key, 19 of these subjects suggested verbal labels that used the word "back" either alone or in combination with other words: back, back 1 letter, back a space, back func, back move, back one, back place, back search, back spacer, back step, back up, backup, backup key, cursor back, and move back. Thus, 53 percent of the military subjects used the term "back" in some manner to describe the movement of the cursor in the left or backward direction.

This process of searching for keywords among the subjects' responses was continued for each key for both groups of subjects with one exception. If a verbal label contained the designated keyword but did not convey the same purpose as the remaining labels that shared the keyword, then it was not counted as an instance of that keyword label. For example, the word "end" was used in various ways for the "end" key (key 1). Although four of the military subjects offered the label "begin end" for this same key, their responses were not grouped with others using the word end because the meaning of the label was ambiguous.

The modal response resulting from the keyword grouping for 19 of the 20 keys is shown in Table 2. Subject responses for one of the keys, the "undo" key, are not shown in this or any subsequent tables. A summary of the results concerning the "undo" key are not presented because what few agreements occurred among the subjects indicated that the concept of the key's action was not conveyed to the subjects adequately.

For most keys, the modified verbal labels still fail to achieve a clear stereotypical response. Only four verbal labels were offered by over 50 percent of the subjects: "back space" by the military subjects (52.5%); and "cursor down," "back space," and "help" by the civilian subjects (51.4%, 75.7%, and 57.1%).

Statistical tests comparing the responses of the military and civilian subjects key-by-key were not conducted. It is possible to test, key-by-key, whether the strength of the stereotype differs between the two populations by comparing the proportion within each sample that offered the modal response; however, such a statistical comparison would be meaningless as few, if any, stereotypes actually exist given one establishes 50 percent agreement as the stereotype standard--and this standard itself may be too lenient. It is noted, however, that on those few occasions when at least 50 percent of one of the samples agreed on the same label, the other sample offered the identical label for that key-cap. Likewise, no comparisons were made between corresponding comfortableness ratings as the percentage of subjects contributing to each mean was frequently quite small.

Table 2

Military and Civilian Verbal Label Stereotypes--Questionnaire Data

Key-action displayed	Military			Civilian		
	Modal label	Percent offering ^a	Mean rating ^b	Modal label	Percent offering ^c	Mean rating
End	End	21.3	4.8	End	41.4	4.9
→	Space	22.5	5.1	Space	34.3	5.5
Delete	Erase	36.3	5.9	Delete	42.9	6.2
↓	Cursor down	37.5	5.2	Cursor down	51.4	5.0
Next page	Down screen	6.3	6.2	Next page	14.3	4.4
←	Back space	52.5	5.6	Back space	75.7	5.9
Prev page	Scan	2.5	6.0	Prev screen	4.3	5.3
Scroll up	Down line	10.0	6.0	Line down	11.4	4.9
Insert	Add	22.5	4.9	Insert	32.9	6.4
Scroll down	Line up	5.0	6.3	Back line	17.0	4.7
Caps lock	Cap	16.3	5.6	Cap	30.0	5.5
↑	Cursor up	27.5	5.6	Cursor up	40.0	5.1
Return	Return	17.5	5.9	Return	28.6	6.0
Home	Start	15.0	5.3	Begin	21.4	5.1

Table 2 - concluded

Key-action displayed	Military			Civilian		
	Modal label	Percent offering ^a	Mean rating ^b	Modal label	Percent offering ^c	Mean rating
Tab	Skip			Six		
	six	26.3	4.4	spaces	45.7	4.9
Shift	Cap	16.3	4.7	Cap	37.1	5.4
On/Off	Clear			Clear		
	screen	16.3	6.1	screen	24.3	5.3
Help	Help	32.5	5.7	Help	57.1	5.9
Print	Print	21.3	6.3	Print	42.9	6.0

^a $\underline{n} = 80$. ^b Rating values ranged from 1 (extremely uncomfortable) to 7 (extremely comfortable). ^c $\underline{n} = 70$.

Symbolic labels. Because the subjects' symbolic labels could not be sorted and tallied by a computer in their original form, they were coded into verbal descriptions. In the majority of cases, each coded description translated into a unique subject-offered symbolic label. For example, the subjects offered two types of symbolic labels involving several arrows pointed to the right: $\rightarrow \rightarrow \rightarrow$ and $\begin{array}{c} \longrightarrow \\ \longrightarrow \\ \longrightarrow \end{array}$. The first label was coded as a "multiple right arrow" whereas the second label was coded as a "stack right arrow". In a few cases, the subjects' symbolic labels appeared to share enough physical or functional similarity to be grouped together using the same translated code. For example, responses showing a series of stacked horizontal lines with an arrow pointing upward were coded as "horizontals up arrow" regardless if that arrow appeared to the right or the left of the stack of lines. As an example of functional similarity, responses that showed a before/after sequence where the end result indicated that the same function had taken place were given the same code. Thus, the responses "the \rightarrow th_" and "ABC \longrightarrow AB_" were both coded as "delete example." In this way the symbolic labels were recorded largely in the same "verbatim" fashion as were the verbal labels.

To verify the validity of the verbally-translated codes and the reliability of the coding process itself, the development of the codes and the translation of the subjects' symbolic responses to codes was conducted independently by three persons: the author and two graduate research assistants. All disparities were discussed and rectified prior to analyzing the data. The verbally-translated codes along with their frequencies and mean

ratings are shown for each key in Appendix C.

The modal symbolic response for each key within each sample is shown in Table 3. An examination of this table reveals that a minimum agreement among 50 percent of the subjects within either sample was not reached for any of the keys demonstrated. Such a result indicates that there are no symbolic stereotypes for the keys tested for either population. Therefore, as with the verbal labels above, no further key-by-key statistical assessments were conducted on this data.

Part 2

Method

Subjects. The military and civilian subjects who participated in the computer phase of the study were obtained in the same manner as they were in the questionnaire phase: the 23 military subjects were supplied by the U.S. Army Human Engineering Laboratory; the 30 student subjects were obtained through advertisements to undergraduate introductory psychology courses. The responses of one military and one student subject were not included in the final data analysis because the subjects did not follow the directions properly.

The remaining 22 military subjects ranged in age from 19 to 38 years ($M = 25$ years), were primarily male (95%) and privates (modal rank of E1); and typically had been in active duty for about 6 months. Only one military subject stated that English was not the language he spoke most often and only two military subjects had not completed high school (75 percent stated that their last completed grade level was 12).

Table 3

Military and Civilian Symbolic Label Stereotypes--Questionnaire Data

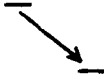
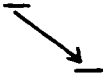






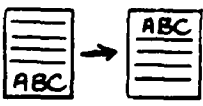


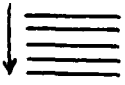



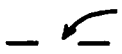
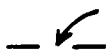
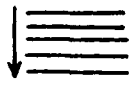












Key-action displayed	Military			Civilian		
	Modal label	Percent offering ^a	Mean rating ^b	Modal label	Percent offering ^c	Mean rating
End		16.3	5.3		30.0	5.0
→		28.8	5.9		32.9	5.9
Delete	ABC→AB-	17.5	3.9		18.6	4.7
↓		27.5	6.1		37.1	6.0
Next page		3.8	6.3		10.0	3.0
←		38.8	5.3		47.1	6.3
Prev page		3.8	3.3		4.3	4.0
Scroll up		6.3	5.8		14.3	4.9
Insert		11.3	3.8		15.7	3.5
Scroll down		3.8	4.7		10.0	6.3
Caps lock	a→A	18.9	5.8	a→A	22.9	4.5
↑		25.0	6.0		38.6	5.6
Return		16.3	5.6		17.1	5.1
Home		20.0	3.8		30.0	4.4

Table 3 - concluded

Key-action displayed	Military			Civilian		
	Modal label	Percent offering ^a	Mean rating ^b	Modal label	Percent offering ^c	Mean rating
Tab	→	11.3	5.4	→6	25.7	4.3
Shift	a→A	10.0	5.6	Aa	20.0	4.3
On/Off		8.8	3.3		24.3	3.7
Help	?	6.3	3.8		17.1	5.1
Print		7.5	4.7		10.0	5.0

^a n = 80. ^b Rating values ranged from 1 (extremely uncomfortable) to 7 (extremely comfortable). ^c n = 70.

About 73 percent of the military subjects had used a computer system at least once prior to this study.

The students ranged in age from 17 to 31 years ($M = 20$ years) and were about equally distributed between the two sexes (48% were male; 52% were female). Two student subjects indicated that English was not the language they spoke most often and all of the student subjects had completed high school (79 percent responded that their last completed grade level was 12). About 79 percent of this sample had used a computer at least once prior to participating in the present study. As in the questionnaire phase of the study, none of the subjects who participated in Part 2 were paid.

Apparatus and Materials. The same 20 keyboard functions studied in Part 1 were examined in Part 2. The only difference between the two studies was that the BEFORE and AFTER computer screen pictures previously shown on the questionnaire now were displayed on IBM PC computers by a program specifically designed for that purpose. The keyboards of these computers were covered to prevent biasing the subjects' responses. Only the numeric keypad "+" and "-" keys and the "PrtSc *" key were visible to the subjects as these keys were needed to allow the subjects to page forward, to page backward, and to see the actions of the key-cap to be labeled.

Two sets of response sheets were used in Part 2. Each set essentially was identical to its corresponding Part 1 questionnaire with two exceptions: the BEFORE/AFTER pictures were removed from each page and the top of each response sheet identified by number the key-cap label to be recorded on it (see

Appendix D).

Procedure. The Part 2 data was collected in group sessions of two to three subjects, although in each case each subject had his or her own computer with which to work. As in Part 1, the subjects were told the purpose of the study and of their role within it and were asked to complete and sign an informed consent form.

An experimenter then demonstrated the example BEFORE/AFTER computer screen sequence to familiarize each subject with the computer screen, modified keyboard, and general procedure. Following the demonstration, the subjects read and heard the reminder list and then were left to complete the 20 BEFORE/AFTER screen sequences at their own pace. Most subjects did so within one hour; however, a few military subjects took as long as one and three-quarter hours.

Results and Discussion

Verbal labels. The data gathered from the subjects who saw the BEFORE/AFTER examples on computers were treated the same way as they were in Part 1. The verbatim alphabetical verbal labels offered by both groups of subjects are shown in Appendix B. The modal responses and their percentages and mean ratings based on the modified keyword grouping are shown in Table 4.

Using the minimal 50 percent within-group agreement standard, one stereotype exists for the military population and four stereotypes exist for the civilian population. Within the military sample, the modal label provided was "Back space" (50.0%) for the backspace key (key 6), as it was in Part 1.

Table 4

Military and Civilian Verbal Label Stereotypes--Computer Data

Key-action displayed	Military			Civilian		
	Modal label	Percent offering ^a	Mean rating ^b	Modal label	Percent offering ^c	Mean rating
End	End	18.2	5.0	End	37.9	5.1
→	Space	27.3	5.7	Space	31.0	5.7
Delete	Delete	31.8	6.6	Delete	51.7	5.7
↓	Down	45.5	5.8	Down		
Next page	(d)			line	34.5	4.6
				Next		
				page	10.3	6.0
←	Back			Back		
	space	50.0	5.8	space	75.9	6.0
Prev page	Next			Back		
	page	22.7	5.8	(screen)	17.2	4.8
Scroll up	Next			Down		
	line	9.1	6.5	line	13.8	5.0
Insert	Insert	31.8	6.1	Add	37.9	5.3
Scroll down	(d)			Back		
				line	13.8	4.8
Caps lock	Caps	27.3	5.5	Caps	51.7	5.5
↑	Cursor			Up		
	up	27.3	5.7	(line)	44.0	5.3
Return	Return	22.7	5.6	Return	17.2	6.2
Home	Begin	13.6	6.0	Begin	34.5	5.2

Table 4 - concluded

Key-action displayed	<u>Military</u>			<u>Civilian</u>		
	Modal label	Percent offering ^a	Mean rating ^b	Modal label	Percent offering ^c	Mean rating
Tab	Space			Skip		
	six	22.7	6.0	six	41.4	5.0
Shift	Caps	22.7	5.6	Cap	31.0	3.9
On/Off	Clear			Clear		
	screen	13.6	6.7	screen	24.1	5.8
Help	Help	40.9	6.2	Help	51.7	6.3
Print	Print	31.8	6.1	Print	44.8	5.2

^a $\underline{n} = 22$. ^b Rating values ranged from 1 (extremely uncomfortable) to 7 (extremely comfortable). ^c $\underline{n} = 29$. ^d The lack of a label indicates that no two subjects within the sample offered the same label.

Within the civilian population, two of the modal labels were identical to those found in Part 1: Back space (75.9%) and Help (51.7%) for the backspace (key 6) and help (key 19) keys. Two new civilian stereotypes emerged--Caps (51.7%) for the caps lock key (key 11) and Delete (51.7%) for the delete key (key 3)--and one Part 1 stereotype failed to emerge--for the down arrow key (key 4).

Because the percentages corresponding to the modal responses again tended to be low, no key-by-key statistical comparisons were made. As with the Part 1 data, however, it should be noted that on those few occasions when at least 50 percent of one of the samples agreed on the same label, the other sample offered the identical label as their modal response.

Several points should be noted about the differences in civilian stereotypes emerging from Part 1 to Part 2--Caps, Delete, and Down line. First, subjects who saw the BEFORE/AFTER examples demonstrated on the computer tended to differentiate between the actions of the Caps lock and the Shift keys by referring to them as the Caps and Cap keys. Conversely, subjects who saw the examples on the questionnaire did not differentiate between the keys but rather tended to label them both as Cap. Nonetheless, the labels in all cases were not offered by an overwhelming number of civilian subjects. Additionally, it is not likely that this small difference in word form would be noticed frequently enough by users that they would avoid selecting the keys interchangeably if both labels were offered on the same keyboard.

Second, although the delete key label offered by the

civilian-questionnaire subjects did not result in a stereotyped response (there was only 42.9% agreement), their modal response was identical to that of the civilian-computer subjects--Delete. And third, the civilian stereotype of "Cursor down" that emerged using the questionnaire (51.4%) is not different in its keyword from the civilian modal response that occurred using the computer--"Down line" (34.5%). Taking these observations together leads to the conclusion that the verbal labels offered by the subjects in Part 1 do not differ greatly from those offered by the subjects in Part 2.

Symbolic labels. The symbols offered by the computer-subjects were translated into verbal descriptions in the same manner as they were in Part 1. The verbally-translated codes along with their frequencies and mean ratings are shown for each key in Appendix C. The modal response for each key within each sample is shown in Table 5.

An examination of this table reveals the same result as was found in Part 1. No clear symbolic stereotype emerges for either sample; that is, not one symbolic label was offered for any key by 50 percent or more of either sample.

General Conclusions

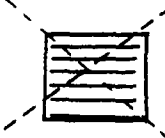

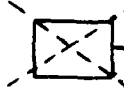




Four general conclusions can be drawn from this study. First, few, if any, clear stereotypes emerged for either population. If novice computer users complain that computer designers select labels that are not understandable to the new computer user (see, for example, Landauer, et al., 1983), that practice may occur because so many options exist from which to select. The reader is referred back to the appendices for

Table 5

Military and Civilian Symbolic Label Stereotypes--Computer Data

Key-action displayed	Military			Civilian		
	Modal label	Percent offering ^a	Mean rating ^b	Modal label	Percent offering ^c	Mean rating
End		22.7	2.8		17.2	5.4
		22.7	4.6		44.8	5.7
Delete		27.3	5.0		17.2	5.4
		27.3	6.2		31.0	5.9
Next page		9.1	6.5		10.3	5.3
		27.3	5.0		44.8	5.7
Prev page		9.1	3.0		10.3	3.7
Scroll up		13.6	5.0		10.3	5.0
Insert		18.2	4.0		10.3	5.3
Scroll down		9.1	5.5		13.8	4.8
Caps lock		18.2	4.2		13.8	3.5
		22.7	5.6		31.0	5.8
Return		9.1	7.0		17.2	5.6
Home		36.4	3.8		10.3	4.0
					10.3	4.0

Table 5 - concluded

Key-action displayed	Military			Civilian		
	Modal label	Percent offering ^a	Mean rating ^b	Modal label	Percent offering ^c	Mean rating
Tab	—→6	13.6	4.7	—→6	17.2	5.2
Shift	Aa	13.6	6.0	Aa	24.1	2.9
On/Off		13.6	4.3	   	6.9 6.9 6.9	6.0 6.0 6.0
Help	?	9.1	6.0	?	17.2	5.8
Print		27.2	5.5		44.8	4.3

^a $\bar{n} = 22$. ^b Rating values ranged from 1 (extremely uncomfortable) to 7 (extremely comfortable). ^c $\bar{n} = 29$.

support for this claim. What is natural to one person often is natural to other persons--but, unfortunately to only a few of them. That this observation holds true for the military population is especially disappointing given the advantage of stereotypical labels under stressful conditions.

Why are people's suggestions so disparate? In general, although some stereotypes appear to be innate or hard-wired, as when people naturally turn toward a flickering light source, many others are learned, as when a light is turned on by Americans by flipping a switch up and by Britons by flipping it down. With respect to computer-related labels, stereotypes obviously are learned; otherwise the majority of subjects would have agreed on a label for each key.

From where they are learned and the user-models on which they are based is unclear. No doubt some people have accepted the labels on the systems on which they have worked--the responses del, ins, home, and end would support this conclusion. Other people may use typewriters as their model--as the response "back space," the response with greatest agreement, would suggest. Still other people may have no model at all and might, if asked at some future date to repeat the study, suggest quite different labels for many or all of the keys. The issue of the test-retest reliability of computer-related stereotypes has yet to be examined.

Nonetheless, the lack of intersubject agreement has important implications for understanding the inconclusiveness of studies comparing user performance with population stereotype and researcher-generated computer labels. If no true stereotypes

exist for computer functions, a comparison of these two types of labels is meaningless; although a set of labels can be generated from user suggestions, these labels will not represent enough of the population to be any more memorable to the population than a set generated by an experimenter.

Second, the lack of sufficient agreement within each sample makes the question of whether or not (and hence how) the two populations differ with respect to computer keyboard label stereotypes difficult to answer. However, if one accepts a successful stereotype as an agreement among 50 percent or more of a sample, then the proportion of stereotypes to opportunities for stereotypes per sample can be compared between the two groups. Doing so results in a proportion of .03 and .09 for the military and civilian samples, which is not a statistically significant difference, $\chi^2 = 2.96$, $p > .05$.

Third, using the same comparison method as above, there is reason to believe that verbal labels are more likely to yield population stereotypes than are symbolic labels, at least for the civilian population. The proportion of stereotypical verbal and symbolic labels did not differ statistically for the military subjects (.05 and .00, respectively), $\chi^2 = 2.06$, $p > .05$. The civilian subjects, however, were more likely to agree on a verbal label than they were on a symbolic one (.18 and .00, respectively), $\chi^2 = 7.72$, $p < .01$.

Just why the civilian subjects were more prone to select the same verbal labels rather than symbolic ones is not easily answered. Based on informal comments and observations, it could be that people more naturally think about words rather than

symbols and hence find them easier to generate--but such an argument would not explain the lack of an effect for the military subjects. Another possibility is that this difference is a result of an artifact of this particular study--the manner in which the verbal labels were grouped into keywords and the symbolic labels were coded into verbal descriptions. It is quite likely that the verbal grouping was too lenient and the symbolic coding was too stringent. The reader may wish to contemplate this point for him- or herself with the following example. The subject-generated symbols $\text{---}\longrightarrow$ and \longrightarrow both indicate movement to the right, yet superficially they differ. Because of their prima facie difference, they were coded as different suggested labels: cursor right arrow and right arrow. Perhaps these two symbols, and others, should have been viewed as the same label.

If the latter explanation, that the grouping of responses was unequal between the two types of labels, is true, then two modified conclusions are warranted. First, the civilian population may not have a preference for one or the other type of label. And second, the military verbal stereotypes may be even weaker than originally stated.

The fourth issue addressed in this paper is whether stereotype data gathered using the actual equipment to which they apply is more valid than that gathered using paper-and-pencil methods. Considering that the total number of stereotypes revealed by each of the methods was about equal--one for each method within the military sample; and three and four within the civilian sample for the questionnaire and the computer methods--

the answer appears to be no.

The lack of superiority of one method over another is supported further by informal observations. Regardless of the method to which they were exposed, the subjects appeared to understand what the actions of the various keys did to the text on their "screens." To determine whether the level of this understanding differed statistically between the two methods, the proportion of suggested labels that realistically described the keys' actions could be compared. Such a comparison was not made, however, because conclusions about which suggested labels were and were not realistic could not be drawn by mere examination. If such conclusions were drawn, they would be based solely on the author's opinions. An empirical test comparing people's performances using the various labels would be necessary to draw reasonably definitive conclusions. At this point, however, it appears that gathering computer-related stereotype information using paper-and-pencil methods is sufficiently similar to using computer or prototype methods to spare future researchers the expense of developing and testing equipment prototypes.

In addition to this last encouraging note, the disparity among the subjects' responses themselves can be viewed as encouraging. In the present study, as in the few other studies that have investigated stereotypes, the focus of the data analysis has been on searching for similarities on a face-value level. An examination of the Appendices raises the question of whether subjects' responses are similar in other ways. Although more time-consuming, it is worth considering, for example, whether the populations use or avoid abbreviations; use technical

or everyday vocabulary; use verbs, verbs and objects, or objects alone; use pictures of objects or symbols (e.g., a pencil with an eraser versus χ for Delete or a printer versus a computerized letter set for Print screen); and use labels that are both specific to their intended use and congruent with other labels.

Taken together, the discussion presented above leads to several conclusions. First, on a superficial level, there is little intersubject replicability in labeling computer key-caps for both military and civilian populations. Second, further research needs to be conducted to determine just how to group subject responses--both for physical similarity of symbolic labels and for the more grammatical issues raised above. And third, at least for computer keyboard investigations, such research can be conducted just as effectively using a questionnaire as using a computer.

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Appendix A

Paper-and-Pencil Questionnaire

Used in Part I

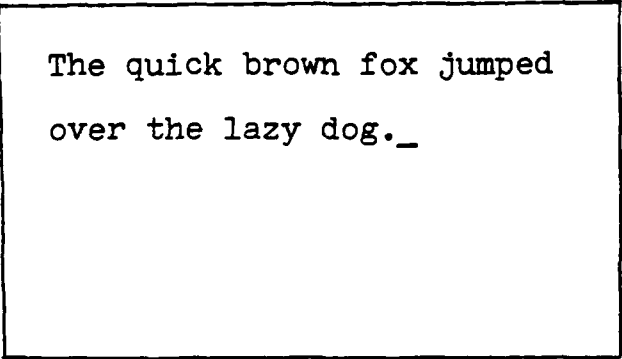
INSTRUCTIONS

The purpose of our research is to find out what labels we should put on the non-alphanumeric key-caps on computer keyboards. That's why we need your help. We want you to tell us how the special keys on computer keyboards should be labeled. We'll show you what pressing various keys on a computer does, and you'll tell us what to call those keys.

More specifically, we'll show you a series of 21 sets of BEFORE/AFTER drawings of computer screens. Each of these sets of BEFORE and AFTER drawings will show the actions of a different computer key. For example, look at the BEFORE and AFTER screens shown below. Notice how the information on the drawing of the computer screen changes from the BEFORE to the AFTER screen.

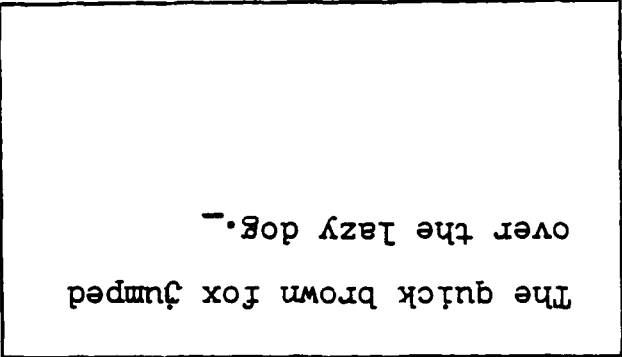
EXAMPLE BEFORE/AFTER SCREENS

Here is a computer screen BEFORE a key is pressed:



The quick brown fox jumped
over the lazy dog._

AFTER the key is pressed, the screen looks like this:



The quick brown fox jumped
over the lazy dog._

For each of the 21 sets of BEFORE/AFTER screens you'll see, your task will be the same. You will give both a verbal label (that is, a word, short phrase, or abbreviation) and a symbolic label (a drawing or picture) that you feel best describes what pressing that key does. Then you will use rating scales to indicate how comfortable you feel with your suggestions. Turn to the next page and you'll see how you might respond to the BEFORE/AFTER example you just saw above.

EXAMPLE RESPONSES:

Suppose that you felt the phrase TURN OVER was the best verbal label for what happened to the information in the example. Then, you would fill in the question below like this:

Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes this key.

T U R N
O V E R

And if you thought that your suggestion of TURN OVER was an extremely good one, you would complete the rating scale below like this:

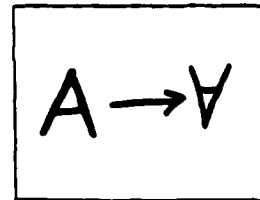
How comfortable do you feel with the verbal label you suggested?

Extremely : Uncomfortable : Slightly : Neutral : Slightly : Comfortable : Extremely
Uncomfortable Uncomfortable Comfortable Comfortable Comfortable

✓

For the same key, you would then need to suggest a symbolic label that describes what happened to the information on the BEFORE and AFTER screens. One possibility would be A → V. So you would respond to the question below like this:

In the box to the right, draw a symbol or picture that describes this key.



And, once more, you would rate how well you feel the symbol describes the key's actions. Maybe this time you feel that this symbol is not quite so good. In that case, you would place a check mark on the scale like this:

How comfortable do you feel with the symbol you suggested?

Extremely : Uncomfortable : Slightly : Neutral : Slightly : Comfortable : Extremely
Uncomfortable Uncomfortable Comfortable Comfortable Comfortable

✓

A FEW IMPORTANT POINTERS

Here are a few aspects about completing our questionnaire that are quite important:

1. There are 20 different "keys" that need to be labeled. Give both a verbal and a symbolic label for each one. Don't skip any. If you really can't think of a label, write "Don't know" in the blanks or in the box.
2. Somewhere on every screen you'll see a little line that looks like this " _ ". This line is called a cursor. Computer manufacturers use cursors to show us where what we type will appear on the screen. Pay special attention
 - o to where the cursor is located for each of the 20 "keys."
 - o to whether or not the cursor's position changes
 - o to if and how the information in the examples changesand
 - o to if and how the information in the examples moves on the screens.
3. Some of the examples we've selected to show you how a key works differ slightly from the BEFORE/AFTER example you just saw. It is very important that you read each example carefully so that you see just what the key does.
4. For the verbal labels, do not put more than one letter per space. You may use less than the total 12 spaces. You must not suggest a verbal label that is more than 12 spaces (two rows of six spaces each). Also, do not split a word across the two lines. For example, if you thought the phrase TURN OVER was a good label for the example you saw on the first page of the instructions, it would be fine to write it in this way:

T U R N
O V E R

But, you cannot write TURN OVER this way:

T U R N O V
E R

We ask that you limit your labels to no more than two rows of six spaces because otherwise computer manufacturers will not have the room to put the word or phrase on the key-caps.

5. Feel free to flip backward and forward throughout the examples. It's okay to go back and change an answer.

Here is a computer screen BEFORE a key is pressed:

When the mind is
troubled, the body is
troubled.

AFTER the key is pressed, the screen looks like this:

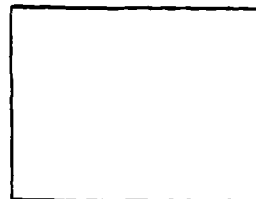
When the mind is
troubled, the body is
troubled.

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

A rocket rises from the
pad_

AFTER the key is pressed, the phrase "that launched the original sputnik as well as" is typed, and then the screen looks like this:

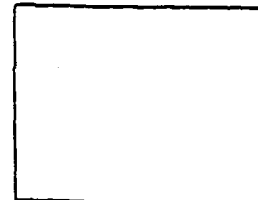
A rocket rises from the
pad THAT LAUNCHED THE
ORIGINAL SPUTNIK AS WELL
AS_

Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely : Uncomfortable : Slightly : Neutral : Slightly : Comfortable : Extremely
Uncomfortable Uncomfortable Comfortable Comfortable Comfortable

In the box to the right, draw a symbol or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely : Uncomfortable : Slightly : Neutral : Slightly : Comfortable : Extremely
Uncomfortable Uncomfortable Comfortable Comfortable Comfortable

Here is a computer screen BEFORE a key is pressed:

Reagan badly wants to wind
up his presidency as the
leader who restored US
military and economic
might. To do so, he_

AFTER the key is pressed, the screen looks like this:

Reagan badly wants to wind
up his presidency as the
leader who restored US
military and economic
might. To do so, he

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

Crack has dominated media
attention during this
recent surge in drug
coverage.

AFTER the key is pressed,
the screen looks like this:

Crack has dominated media
attention during this
recent surge in drug
coverage.

AND, when the key is pressed
again, the screen looks like this:

Crack has dominated media
attention during this
recent surge in drug
coverage.

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

Another hour goes by and_

AFTER the key is pressed,
the screen looks like this:

Another hour goes by and

-

AND, when the key is pressed
again, the screen looks like this:

Another hour goes by and

-

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable

Uncomfortable

Slightly Uncomfortable

Neutral

Slightly Comfortable

Comfortable

Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.

How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable

Uncomfortable

Slightly Uncomfortable

Neutral

Slightly Comfortable

Comfortable

Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

The biggest competition
is the race to build the
first optical computer,
considered a practical
impossibility only a few

AFTER the key is pressed,
the screen looks like this:

impossibility only a few
years ago. In theory,
photons would race through
such a machine with near
perfect efficiency. When

AND, when the key is pressed
again, the screen looks like this:

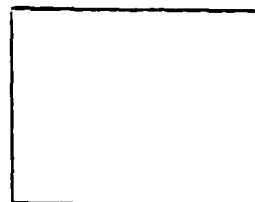
perfect efficiency. When
such a machine is sold on
the open market, it will
quickly replace current
machines, even in the

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

Many Americans mistakenly
believe that

AFTER the key is pressed,
the screen looks like this:

Many Americans mistakenly
believe that

AND, when the key is pressed
again, the screen looks like this:

Many Americans mistakenly
believe that

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

After th_game I met Pete
in the clubhouse.

AFTER the key is pressed, the letter "e" is typed, and the screen looks like this:

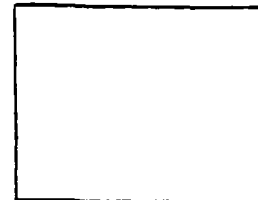
After the game I met Pete
in the clubhouse.

Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

The DEA said the drug
is not available in some
major cities, including
Chicago, Philadelphia,
and New Orleans, and is

AFTER the key is pressed,
the screen looks like this:

is not available in some
major cities, including
Chicago, Philadelphia,
and New Orleans, and is
not widely available in

AND, when the key is pressed
again, the screen looks like this:

major cities, including
Chicago, Philadelphia,
and New Orleans, and is
not widely available in
many other metropolitan

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely : Uncomfortable : Slightly : Neutral : Slightly : Comfortable : Extremely
Uncomfortable Uncomfortable Comfortable Comfortable Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely : Uncomfortable : Slightly : Neutral : Slightly : Comfortable : Extremely
Uncomfortable Uncomfortable Comfortable Comfortable Comfortable

Here is a computer screen BEFORE a key is pressed:

Professionals now account
for an estimated 11% of the
800,000 Americans who work
each day in temporary jobs.

AFTER the key is pressed,
the screen looks like this:

Professionals now account
for an estimated 11% of the
800,000 Americans who work
each day in temporary jobs.

AND, when the key is pressed
again, the screen looks like this:

Professionals now account
for an estimated 11% of the
800,000 Americans who work
each day in temporary jobs.

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

The significance of all
this activity went far
beyond the fates of _

WHILE the key is pressed, the
letter "l" is typed and the
screen looks like this:

The significance of all
this activity went far
beyond the fates of L_

THEN the key is released and
the letter "l" is typed again
and the screen looks like this:

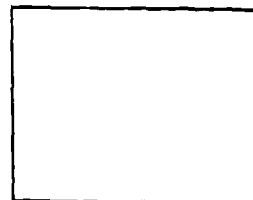
The significance of all
this activity went far
beyond the fates of Ll_

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

A dented automobile fender
that could be returned to
new with a blow dryer
sounds great.

AFTER the key is pressed,
the screen looks like this:

A dented automobile fender
that could be returned to
new with a blow dryer
sounds great.

AND, when the key is pressed
again, the screen looks like this:

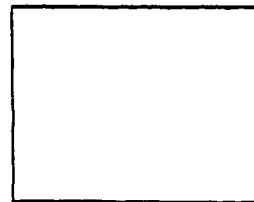
A dented automobile fender
that could be returned to
new with a blow dryer
sounds great.

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

Lawyers, doctors, computer
experts and college pro-
fessors willing to punch
in and out for up to \$150
an hour are being offered

AFTER the key is pressed, the screen looks like this:

Lawyers, doctors, computer
experts and college pro-
fessors willing to punch
in and out for up to \$150
an hour are being offered

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

Cheaper, metal alloys
have been developed to
replace gold, but none of
them have worked as well.
Some are even suspect: _

AFTER the key is pressed, the screen appears on a PRINTER like this:

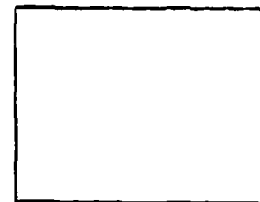
Cheaper, metal alloys
have been developed to
replace gold, but none of
them have worked as well.
Some are even suspect:

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

It is almost beyond
belief, this scene from
the Middle Ages. A fire
burns in a dark corner of
a room. At the other end_

AFTER the key is pressed, the screen looks like this:

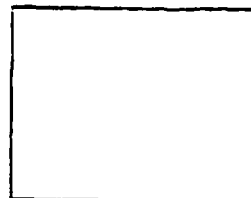
< < < HELP MENU > > >
On what do you need help?
J Help K Block
Q Quick P Print
O Onscreen _

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable Slightly Uncomfortable Neutral Slightly Comfortable Comfortable Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable Slightly Uncomfortable Neutral Slightly Comfortable Comfortable Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

The easy atmosphere that
atracts them here is the
very thing that gets them
into trouble.

AFTER the key is pressed,
the screen looks like this:

The easy atmosphere that
attracts them here is the
very thing that gets them
into trouble.

AND, when the key is pressed
again, the screen looks like this:

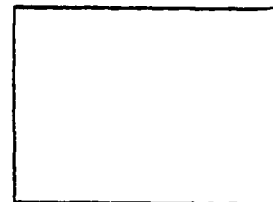
The easy atmosphere that
attracts them here is the
very thing that gets them
into trouble.

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

music this side of heaven.
Thrill to the sound of
Swing as you've never
heard it before--in
stunning stereo! Through

AFTER the key is pressed,
the screen looks like this:

to the irresistible best of
Swing. Relive those
dancing decades as you
listen to the jumpin'est
music this side of heaven.

AND, when the key is pressed
again, the screen looks like this:

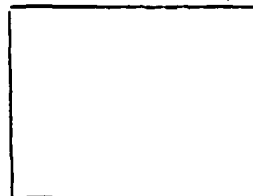
Soda fountains. Radio.
Glenn Miller. Saddle shoes.
The Aragon Ballroom. And
dancing every Saturday night
to the irresistible best of

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

choose Tempo and Topaz to
evoke the right image for
its new compact models. The
company rejected nominees
like Coventry, Serval, and

AFTER the key is pressed,
the screen looks like this:

in shopping malls to help
choose Tempo and Topaz to
evoke the right image for
its new compact models. The
company rejected nominees

AND, when the key is pressed
again, the screen looks like this:

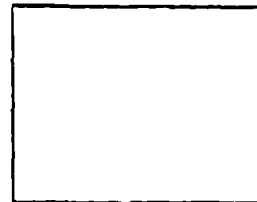
Ford polled 600 consumers
in shopping malls to help
choose Tempo and Topaz to
evoke the right image for
its new compact models. The

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Here is a computer screen BEFORE a key is pressed:

Service industries, travel,
and information flow have
all increased. Our working
time will be organized less
formally and then might be

Then one key is pressed, and
the screen looks like this:

Service industries, travel,
and information flow have
all increased. Our working
time will be organized less
—

When a SECOND key is pressed,
the screen looks like this:

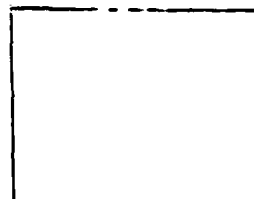
Service industries, travel,
and information flow have
all increased. Our working
time will be organized less
formally and then might be

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this SECOND key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this SECOND key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

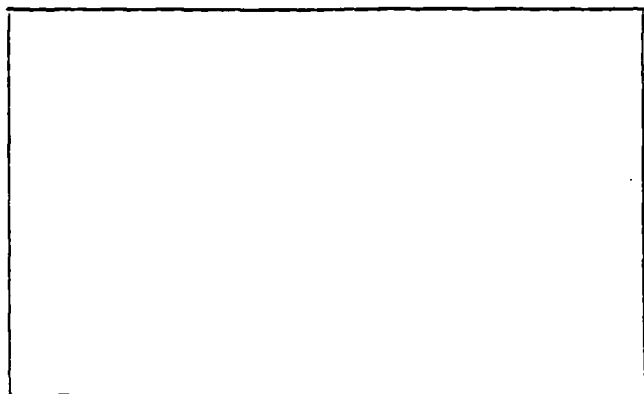
Here is a computer screen BEFORE a key is pressed:

MS-DOS Computer 3.10

Copyright 1981, 1985
is ready.

Current date is 1/01/80.
Enter new date: _

AFTER the key is pressed,
the screen looks like this:



AND, when the key is pressed
again, the screen looks like this:

MS-DOS Computer 3.10

Copyright 1981, 1985
is ready.

Current date is 1/01/80
Enter new date: _

Fill in the blanks below with a verbal label (word,
short phrase, or abbreviation) that describes this SECOND key.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol
or picture that describes this SECOND key.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Computer Keyboard Research

BACKGROUND INFORMATION

How old are you? _____

Are you _____ male or _____ female?

Is English the language you use most often? _____ yes _____ no

What is the last grade-level you completed in school? _____

Have you ever used a computer before? _____ yes _____ no

If you have used a computer before, how often would you say you have used it (or them)? (Please check one)

_____ very often (daily or nearly so)

_____ frequently (at least once a week)

_____ seldom (at least once a month)

_____ rarely (less than once a month)

If you have used a computer before, please write down the name or names of the computers you have used (e.g., IBM, Texas Instruments, etc.):

Appendix B

Verbal Labels Offered
by Military and Civilian Subjects
for 20 Keyboard Functions

Note. The following abbreviations are used in the column headings:

s = STUDENTS (Civilian sample)

q = QUESTIONNAIRE-demonstrated data

f = FREQUENCY with which the label was offered

r = mean RATING where 1 = extremely uncomfortable and 7 = extremely comfortable

o = the number of OTHER remaining instances where the label was used on some other key by subjects within that group

c = COMPUTER-demonstrated data

m = MILITARY subjects

Thus, the column headed "sqf" indicates the frequency with which civilian subjects exposed to the questionnaire offered each of the verbal labels listed in column one. The column headed "mcr" indicates the mean rating provided by military subjects exposed to the computer-demonstrated BEFORE/AFTER examples.

KEY 1 -- END

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
adv to end				1	5.0							
adv to period				1	6.0							
advance							1	4.0				
angle right										1		
at the end							1	4.0				
back space			37			10	2	6.0	23			11
before after										1	4.0	
begin again			3				1	4.0	3			
begin end	1	3.0					4	2.8		1	6.0	
beglet endlet				1	2.0							
bottom	2	5.5										
bottom return	2	5.0										
bottom right				1	5.0		1	7.0				
bottom rt cur										1	5.0	
bottom screen	2	5.0										
change	1	5.0	2			6			3			
check para	1	2.0										
confuse										1	2.0	
cont			1	1	3.0	2			3			
corner cursor	1	3.0	1									
cursor	1	6.0	3						3			
cursor advan				1	5.0				1			
cursor advnc										1	6.0	
cursor bottom	1	3.0								1	6.0	
cursor change							2	5.5	3			
cursor down	2	6.5	14				1	5.0	9	1	2.0	
cursor end	3	4.7		1	5.0		1	5.0				
cursor last	1	5.0					1	4.0				
cursor line										1	6.0	
cursor pause							1	6.0				
cursor place	1	6.0										
cursor point				1	4.0							
cursor repo							1	3.0				
cursor reveve							1	4.0				
cursor shift			1				1	6.0				
cursor to end	2	1.5					1	4.0				
diag down				1	6.0							
don't know			20			4	18		148			
down over							1	6.0				
drop space							1					
end	3	3.0	4	3	5.0		4	5.5	3			
end cursor				1	3.0				1			
end letter	1	2.0					1	6.0				
end line	1	5.0	1				1	7.0	1			
end move							1	2.0				
end of file	1	6.0										
end of page	1	7.0										
end of para	1	4.0										
end of screen							1	6.0				
end of sent	2	1.5								1	4.0	
end page				1	6.0							
end para	2	4.0	1	1	6.0							
end screen			1	1	6.0	1	1	6.0				
end sent	1	5.0		1	5.0							
end space	1	5.0										
end text	1	7.0										
ending			64				1	7.0	1			

KEY 1 -- END

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
equal	1	7.0	1									
exp							1	6.0				
finish			4				1	4.0	3			
finish type	1	3.0										
first last	2	4.5		1	5.0	1				2	5.0	
first to last							1	7.0				
flash	1	4.0										
forward			1				1	1.0	3	1	6.0	
front trace	1	5.0										
go end	1	6.0										
go to end	2	7.0										
go to z	1	5.0										
hold							1	1.0	1			
hyper space							1	7.0				
jump			1	1	5.0	2	1	5.0	2			1
jump para				1	5.0							
jump three	1	6.0										
last	1	6.0										
last char				1	5.0					1	6.0	
last letter	2	4.5					2	4.5	2			
line						1	1	4.0	2			
line at end	1	4.0										
line change			3	1	2.0	5			2			1
line check	1	4.0	2						4			
line jump				1	4.0	5			1			3
move ahead	1	6.0	1									
move cursor	1	3.0	4			1	1	4.0	9			
move diag p	1	3.0										
move end							1	4.0				
move right	1	4.0	1						3			
next line			22			4	1	5.0	14			4
no answer			3			2	1		6			12
no ending							1	5.0	1			
normal										1	7.0	
page down			1				1		2			1
page end	1	6.0										
page skip				1	6.0							
para							1	7.0				
para end	1	6.0										
para jump							1	4.0				
para skip	1	5.0										
phrase							1	1.0	2			
phrase check	1	3.0							2			
phrase cursor	1	2.0										
phrase move							1	7.0	3			
phrase teller							1	5.0				
print end of										1	6.0	
punc						1	1	4.0				
remove cursor			2				1	5.0	4			
return end	1	5.0										
return over							1	4.0				
reup							1	3.0				
screen end							1	2.0				
screen forwd	1	2.0										
search	1	6.0	1			1			6			
sent jump	1	6.0	1									
sent stay											1	3.0

KEY 1 -- END

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
short phrase							1	6.0				
skip			1	1	4.0	1	1		3			2
skip end										1	6.0	
skip to	1	4.0							1			
spc end				1	5.0							
speed skip										1	6.0	
start and end	1	3.0										
start end	1	3.0										
start finish	1	4.0		1	4.0		1	4.0		1	6.0	
text end							1	2.0				
to end	1	5.0										
top bottom										1	6.0	
top to bottom				1	3.0							
words rearran				1	2.0							

KEY 2 -- →

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
3 consec					1 3.0							
4ward 1 space					1 5.0							
across space							1 4.0					
add space			4			1	1					
adv							1 7.0					
adv one					1							
adv space					1 7.0							
advan cursor											1 7.0	
advance one	1 3.0		1									
ahead one	1 6.0											
ahead space					1 5.0							
change			2		1 7.0	5			3			
change up							1 4.0		1			
char move					1 6.0							
cross letter							1 4.0					
crs for					1 7.0							
cursor	1		2				1 7.0		2			
cursor adv							1 7.0					
cursor dash 1											1 3.0	
cursor move							1 4.0					
cursor mover							1 6.0					
cursor r					1 1.0							
cursor right	3 6.3		2				4 6.2				1 3.0	
cursor sde sp											1 4.0	
cursor shift	1 6.0											
cursor single	1 4.0											
cursor space							3 5.0					
cuts words											1 2.0	
don't know	2		18			4	10		138			
each letter	1 5.0											
edit right	1 6.0											
edit text											1 6.0	2
find			1				1		2			
forward			1				2 3.5		1			
forwrd one											1 5.0	
front cursor	1 6.0											
front moving							1 3.0					
front space	1 6.0						2 7.0		2			
frwd							1 7.0		1			
frwd space 1											1 6.0	
fwd					1 3.0							
fwd dir					1 7.0							
fwd func							1 7.0					
fwr space					2 6.0							
go one	1 5.0											
horz spacer							1 2.0					
jump			1			2			2		1	
left to right											1 6.0	
let check					1 3.0							
letter advan					1 5.0		1 5.0					
letter ahead	1 3.0											
letter check							1 6.0					
letter guide							1 4.0					
letter move							1 6.0		1			
letter over	1 2.0											
letter right							1 5.0					
letter spacer							1 6.0		2		1 7.0	1

KEY 2 -- →

Label	sqf	sqr	sqr	scf	scr	sco	mqf	mqr	mqr	mco	mcf	mer	mco
letter to let					1	4.0							
ltr change					1	4.0							
ltr id											1	5.0	
move 1 space	2	6.0											
move ahead	1	2.0											
move cursor	2	5.0	2	1	5.0		1	4.0	8				
move frwd				2	4.5								
move right	1	6.0					1	6.0	2				
moved III let											1	6.0	1
moving cursor	1	3.0											
mvdfrwd charac											1	4.0	
next	1	6.0	1			2					1		
next char	1	6.0											
next letter	3	6.3	1				4	5.0	1				
next space	3	4.3					2	4.5	1	1	6.0		
next to				1	4.0								
no answer			3			2			6	1			11
one over	1	6.0							1				
one space	1	4.0		1	4.0								
one step	1	6.0					1	2.0					
order							1	4.0					
over 1 letter							1	5.0					
over cursor	1	2.0											
over one	1	5.0											
plus letter	1	4.0											
proceder											1	6.0	
progrs				1	6.0								
repeat	1	6.0	4			1			4				
review							1	6.0	1				2
right	3	4.0					2	7.0					
right after							1	4.0					
right arrow	1	7.0	1										
right cursor	4	4.0					1	7.0					
right move							1	4.0					
right one	1	5.0											
right over							1	5.0					
right space				1	6.0		2	5.0	1				
scan			1				1	6.0	7				
shift cursor	1	7.0	2										
silent letter							1	4.0					
single move							1	2.0					
single scan	1	4.0											
single space	1	5.0	2										
single spacer							1	6.0					
skip letter			1				3	4.7		1	6.0		
skip right							1						
skp ltr											1	4.0	
slide				1	4.0								1
space	10	5.3	6	1	6.0	1	5	5.8	5				
space advnc	1	4.0											
space bar	2	7.0					1	3.0	1				
space change										1	6.0		
space check	1	5.0											
space key	2	5.5	2						1				
space over	1	6.0											
spacer				1	6.0		1	5.0	6				1
spacer right	1	6.0	68										

KEY 2 -- →

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
spc fwd				1	3.0							
start again							1	7.0	2			
two space											1	5.0
undln				1	5.0							
vowel							1	4.0				
word check							1	5.0	2			
word mover							1	6.0				
word scan				1	7.0							

KEY 3 -- DELETE

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
adder eraser											1 6.0	
adjust word	1 6.0											
back edit	1 6.0											
back one			4						3	1 6.0		1
back space	1 7.0	36				10			23	4 5.8		7
back up		1				1	1 1.0		4			
blank	1 3.0					1			1			
blip out							1 7.0					
blk out										1 7.0		
blot out							1 4.0					
char delete				1 6.0								
clear	1 4.0					1			3			
clear letter							1 5.0					
cor	1 3.0											
cor mis	1 7.0											
corct spell				1 5.0								
corr	2 4.5								2			
corr shift							1 4.0		1			
correct										1		
correction			1				1 4.0					
corret							1 6.0					
cort							1 3.0					
crcr				1 5.0								
cursor delete	1 6.0								2			
cursor erase	1 4.0								1			
del	1 6.0			2 6.0			2 2.0		1			
del let	1 4.0									1 6.0		
delete	22 6.2	1		6 6.2			15 6.3		3	2 7.0		2
delete char	1 7.0									1 7.0		
delete device	1 6.0											
delete inst				1 3.0								
delete key							1 4.0					
delete left				1 7.0								
delete letter	2 7.0								1	2 6.0		
delete one sp				1 4.0								
delete space				1 5.0			1 4.0					
don't know	1	17				4	5		133			
double letter		1					1 6.0					
drop				1 4.0								
drop letter							1 4.0					
edit		3	1 6.0		2							
erase	5 6.0	3	2 6.5		2	13 5.7		7		1 7.0		2
erase cursor						1 4.0						
erase error	1 7.0					1 7.0						
erase errors	1 4.0											
erase key	1 6.0											
erase letter	2 6.0		2 5.0				1 6.0			1 6.0		
erase symbol	1 5.0											
eraser	1 2.0						2 6.0		1			1
error	1 6.0						2 5.5		2			
error correc							1 5.0					
error erase	2 4.5						1 5.0					
error key							1 7.0					
error omit							1 2.0					
extra letter							1 6.0					
fix it							1 2.0		1			
fix up	1 1.0											

KEY 3 -- DELETE

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mer	mco
goback one							1 4.0					
gramm				1 7.0								
kill letter	1 2.0											
leave out							1 6.0					
leftto right										1 5.0		
letter erase	2 4.5						3 3.7			1 5.0		
letter eraser							2 4.5					1
letter error	1 6.0											
letter omit							1 6.0					
letter out	1 5.0											
letter type							1 4.0					
ltr delete				1 7.0								
minus letter	1 5.0											
miss space							1 4.0					
missed spell										1 7.0		
move cursor			2				1 4.0	7				
next space							1 4.0					
no answer			3			2		6	1			10
omit	1 4.0	2	1				1 7.0	1				
omit letter	1 6.0											
omit space	1 6.0											
remove	1 7.0			1 5.0					1	1 6.0		
remove letter	1 6.0											
replace lette							1 4.0					
rub							1 6.0					
scan			1				1 6.0	6				
short				1 7.0								
single delete	1 5.0											
space delete				1 6.0					1	1 7.0		
spacer							1 4.0	5				1
spell corr				1 4.0								
take away	1 5.0	1					1 5.0					
take out							1 3.0	4				
word spell	1											
wrong letter							1 6.0					
wrong right				1 6.0								

KEY 4 --



Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
advanc line	1	5.0								1	6.0	1
change			2			5	1	1.0	2			
column down							1	7.0				
cursor dline				1	2.0							
cursor dnpce										1	5.0	
cursor down	10	5.5	4				7	4.7	2			
cursor vert				1	1.0							
don't know			17			4	8		125			
down	2	6.0		1	7.0		5	5.6	5	1	7.0	1
down 1 line				1	6.0	1	1	5.0	1			
down arrow	1	7.0	2									
down cursor	6	4.0	4				2	6.0	1			
down dir										1	7.0	
down func							1	7.0				
down line	3	5.3	3	3	4.0	2	2	4.0	1	1	6.0	
down margin	1	3.0										
down one	2	4.5	1			2	2	5.0	2			
down one line							1	7.0	1			
down para	1	5.0	1									
down space	2	5.0	1				3	5.7	1			1
downer							1	2.0				
drop down										1	6.0	
drop line							1	4.0				
drop one	1	2.0										
drp crs				1	5.0							
edit text										1	6.0	1
elavat or										1	4.0	
finish clear							1	6.0				
frwd line							1	6.0	1			
fwr line				1	6.0							
going down			1	1	6.0					1	6.0	
index	1	6.0	2									
jump	1	6.0		1	5.0	1	1	4.0	1			
jump down	1	4.0										
jump key			1				1	7.0	1			
ladder							1	6.0				
last line			3				1	1.0	1			
line				1	6.0		1	5.0	1			
line below				1	6.0							
line change	2	4.0	1	1	7.0	4	1	5.0	1			1
line check	1		1				2	5.0	2			
line cor				1	5.0							
line cursor	1	6.0	2									
line down	2	6.0	7	2	4.5		2	1.5	3	1	5.0	
line finder							1	5.0				
line jump				4	5.5	1	1	6.0		1	4.0	2
line move				1	7.0		1	7.0				
line number							1		1			
line sent							1					
line skip	4	4.7				1	2	4.5	2			
line space	1	6.0				1			1	1	6.0	
line spacer										1	6.0	1
line up	1	2.0	8			5			6			1
lining							1	4.0				
lower lspace	1	5.0										
move cursor	1	5.0	1				1	4.0	6			
move down	2	5.0				2	1	7.0	2	1	6.0	

KEY 4 --



Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
move right							1 5.0	1				
moved III let										1 6.0		
new line	1 5.0	1				1	1 4.0	5				2
next column							1 6.0					
next level							1 5.0	1				
next line	11 5.2	11		2 5.5	2	7 5.4	7	1 7.0				3
next para	1 6.0	1						1				
one down	1 4.0	1										1
phrase check							1 4.0	1				
recap										1 4.0		
return	1 2.0	29		1 5.0	5	1 4.0	16					3
return down		1				1 5.0	3					
return space	1 4.0											
scan	1 1.0						1 4.0	5				
scan 1 line	1 5.0											
search		1				1	1 4.0	5				
sent down		1								1 4.0		
side							1 4.0					
skip down				1 6.0				1				
skip lines	1 7.0	2					1 6.0	2				
space down	1 5.0	1										
space line						1				1 6.0		
spc down				1 4.0								
start		4					1 4.0	2				
start next	1 7.0											
start nextln				1 4.0								
step down										1 6.0		
take out retu							1 1.0					
undl line				1 3.0								
up & down										1 6.0		1
up down							1 6.0			1 6.0		1
word tracer							1 6.0					

KEY S -- NEXT PAGE

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
4 line screen				1	3.0							
4 lines down							1	2.0				
4-line skip	1	4.0										
5 line cont				1	5.0							
add lines							1	4.0				1
add on			1				1		5			1
add to	1	5.0										
adjust phrase							1	3.0				
adtl info	1	6.0										
adv frame				1	6.0							
advanc parag										1	3.0	
advanc return							1	6.0				
advanc screen	1	5.0										
advnce lines	1	3.0										
as you were							1	4.0				
back track						1	1	6.0	1			
begin			3			2	1	4.0	3			
bottom line				1	5.0							
bottom up				1	6.0							1
bottom line	1	6.0										
bttm tp				1	4.0							
capita izer							1	5.0				
case change			1	1	6.0							
center screen							1	6.0				
change			2	1	2.0	4			2			
change around							1	3.0				
change screen			2			1	2	4.5	3			1
clip key	1	6.0										
col adv							1	7.0				
con't key				1	5.0							
cont	1	6.0		1	3.0	1	1	5.0	2			
cont phrase							1	5.0	2			
contd	1	5.0	1									1
contin uation							1	5.0				
contun							1	4.0				
cursor bttmlt										1	2.0	
cursor es				1	4.0							
cursor skip	1	1.0							2			
disply	1	2.0										
don't know	4		13			4	8		117			
dour down							1	7.0				
down 4 spaces				1	5.0							
down arrow	1	6.0	1									
down fast							1	3.0				
down five	2	4.0										
down four	1	3.0		1	6.0		1	6.0				
down page	2	5.0										
drop four	1	2.0										
edit para										1	6.0	
end screen	1	6.0				1						
extend key							1	6.0				
finish			4				1	6.0	2			
first letter			2			2	1	4.0				
five lines	1	3.0										
forward andup							1					
foward				1	6.0							
frame ahead			74				1	7.0				

KEY 5 -- NEXT PAGE

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
frame check							1					
go							1 2.0		1			
go on	1 3.0								1			
go to				1 4.0								
info advance	1 7.0		1									
insert words	1 2.0		1									
jump word										1 4.0		
keep going			1				1 5.0		1			1
last first	1 1.0		1									1
last line	3 5.7								1			
last line 1st	1 6.0											
last sen up	1 4.0											
line corr				1 1.0								
line key	1 4.0											2
lstline repeat				1 6.0								
memory recall							1 6.0					1
more text							1 4.0					
move screen	1 6.0											
move text	1 4.0		2									
multi space				1 5.0								
never stop										1 2.0		
new line			1			1	1 4.0		4			2
new screen	1 6.0		3									
next line	1 7.0		10			2			7			3
next page	1 7.0		2	2 6.0		3	2 5.0			1 5.0		3
next pair							1 4.0					
next para	1 3.0								1			
next screen	4 5.8		5	1 3.0		1	5 6.2		3	1 6.0		
next sent							1 6.0					
no answer	1		2	1		1			6	1		9
nomove cursor	1 4.0											
page	1 6.0		2									
page down	1 6.0						1		1			1
page fwd							1 7.0					
page que dn				1 6.0								
page shift	1 5.0											
page up			2				1		1	1 6.0		
par down							1					
para adv							1 7.0					
para cont			1				1 4.0					
para phrase							1 4.0					
para search							1 5.0		1			
para up							1 6.0					
parag							1 4.0					
phrase move							1 4.0		2			
place helper										1 5.0		
proof edit							1 6.0					
proof read	1 6.0		1							1 6.0		
push down	1 7.0											
quad skip				1 4.0								
re place	1 6.0											
read							1 4.0		1	1 6.0		
read ahead							1 5.0					
reader							1 2.0					
rep end line	1 5.0											
repeat theend										1 7.0		
return	2 5.5		27			5			16			3

KEY 5 -- NEXT PAGE

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
return key			1				1 6.0	2				2
run on			1				2 3.0	1		1 7.0		
same spot										1 7.0		
scan							1 6.0	4				
scan down	1 4.0											
screen adv	1 7.0	1					1 4.0	1				
screen cont							1 7.0					
screen return	1 2.0	1										
screen roll							1 5.0					
screen scan										1 6.0		
screen up	1 6.0						1					
scroll	1 6.0	1				1						
scroll down	1 7.0	4							1			
scroll down 5	1											
scroll page										1 5.0		
scroll screen	2 6.5											
scroll up		4	1 6.0	1				1				
search		1				1	2 5.0	3				
senten jump	1 5.0	1										
sentnc cont										1 6.0	1	
shift error							1 4.0					
skim check	1 5.0											
skip 4	1 6.0											
skip 4 lines	1 4.0											
skip bot			1 4.0									
skip down 5							1 7.0					
skip four						1	1 6.0					
skip phrase			1 3.0					2				
skip return			1 6.0									
skip to							1 5.0					
small italic										1 6.0		
spacer								5		1 2.0		
start newphr	1 6.0											
start over		2					1 4.0	4				1
top							1 3.0					
total mix up	1 2.0											
trn pge			1 6.0									
up & down										1 6.0		
word skip								1		1 7.0		

KEY 6 -- ←

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
adjust line										1 6.0		1
alpha ffw							1 5.0					
back	3 5.0			1 4.0			2 5.5	1				
back 1 letter							1 7.0					
back 1space				1 5.0								
back a space							1					
back check	1 6.0											
back cursor	2 5.5			1 5.0								
back func							1 5.0					
back key										1 7.0		
back letter	2 5.5			1 6.0								
back move							1					
back one	4 5.8						2 4.5	1		1 4.0		
back place							1 5.0					
back search			1				1 5.0					
back sp				1 6.0								
back space	33 5.9	3	10 6.6				23 5.9			7 6.2		
back spacer							1					
back step							1 3.0					
back track				1 7.0						1		
back trak	1 7.0											
back up		1				1	2 5.0	2				
back wards	2 6.0											1
backup							1 6.0					
backup 1space	1 6.0											
backup key							1 7.0					
bck space				1 6.0								
bkwd				1 6.0								
bkwds				1								
bkwds edit										1 6.0		
bkwds key				1 6.0								
bkwrds 3 spac										1 4.0		
change		2	1 2.0			3			2			
code read							1 6.0					
crs back				1 7.0								
cursor back	2 5.0						1 2.0					
cursor change							1 4.0	2				
cursor go up							1 3.0					
cursor left	4 5.5			1 7.0			4 5.7			1 3.0		
cursor over 1	1 5.0											
cursor rev							2 5.5					
don't know		13				4	4		113			
edit left	1 6.0											
foward spacer							1 6.0					
inst cor				1 5.0								
last letter							2 5.0					
left	2 5.0						1 7.0					
left arrow	1 6.0											
left cursor	2 5.5											
left move							1 4.0					
left shift							1 6.0					
left space							1 7.0					
letter back	1 3.0											
letter eraser										1 7.0		
letter finder							1 7.0	1				
letter indent							1					
letter left							1 6.0					

KEY 6 -- ←

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
letter move							1	5.0				
letter spacer							1	5.0	1	1	7.0	
ltr				1	4.0							
move back	2	2.0					2	5.0	1			
move cursor			1				1	4.0	5			
move left	1	7.0					3	3.3	1	1	7.0	
moved III spa											1	7.0
one before							1	6.0				
prev letter							1	7.0				
regres				1	4.0							
remain											1	1.0
repeat	1	6.0	3			1			4			
retrea t											1	6.0
return	1	6.0	26			5	1	5.0	15			3
rev space				1	7.0							
revers charac											1	6.0
revrse											1	7.0
right left				1	3.0							
right toleft											1	6.0
same word							1	4.0				
screw up							1	3.0				
shift cursor	1	7.0	1									
skip left							1	3.0				
space before	1	4.0										
spacer left	1	6.0										
undone							1	6.0				
unl bkwd				1	4.0							
word check							1	6.0	1			

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
3 ideas				1	2.0							
4 up							1	7.0				
5 line return	1	6.0										
5 lines trace	1	3.0										
about face							1	2.0				
ad vance							1	5.0				
adv screen				1	2.0							
advan key							1	7.0	1			
advanc word										1	6.0	
advnce screen				1	6.0							
analyz e							1	5.0				
back four			2				1	5.0				
back frame				1	7.0							
back line	1	6.0	7			2			2			1
back page	1	4.0										
back screen				1	2.0							
back search	1	5.0										
back text			1	1	6.0							
back up			1	1	3.0				2			
backsc screen	1	7.0										
backup five	1	4.0										
backwards										1	2.0	
begin again	1	5.0	2						3			
begin line			1			1				1	6.0	1
bkwds read				1	6.0							
bottom first							1	6.0				
brain storm	1	3.0										
cap			12			3	1	5.0	12			
cap lower	1	4.0										
capita l							1		1			
change	1	2.0	1	1	5.0	2	1	2.0	1			
change order							1	6.0				
cntr				1	4.0							
con tinue	1	4.0										
cont						1	1	4.0	1			
cont sent	1	6.0										1
cursor list	1	2.0										
cursor para				1	5.0							
cursor same										1	5.0	
data search							1					
don't know	5		8	1		3	22		91			
dont know			4			5	1		60			2
down 5							1	7.0	1			
first letter	1	3.0	1	1	5.0	1						
first word			2	1	5.0							
five up	1	1.0										
frame backup							1	7.0				
go and go bak							1	4.0				
go on							1	5.0				
go up line							1	7.0				
info back	1	2.0										
insert line			1	1	1.0							1
jmp pages				1	5.0							
jump forward				1	3.0							
keep going			1				1	4.0				1
last page							1					
last parag							1	4.0				

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
letter size							1	7.0				2
line back	1	5.0	1									
line edit							1	5.0				
line shift	1	3.0	2						1			
lines before	1	5.0										
memory			3				1	6.0	1			
mind games							1	3.0				
move							1	1.0				
move on	1	4.0	1									
move text	1	5.0	1									
new page				1	1.0	1	1	4.0				
new phrase	1	5.0										
new screen	1	3.0	2									
next frame	2	4.5										
next line	1	7.0	9			2			7			3
next page	2	4.5				3				3	6.0	
next para							1	3.0				
next paragr										1	5.0	
next screen	3	4.7	2			1	2	4.0	1			
next text										1	4.0	1
no answer			2			1			6	2		7
org	1	1.0										
page	1	3.0	1									
page back							1	7.0				
page down							1			1	6.0	
page key										1	3.0	
page que up				1	6.0							
page review							1					
page round				1	2.0							
page up	2	6.0					1	7.0				
pan down							1	4.0				
par up							1	5.0				
para cont	1	3.0										
para review							1	6.0				
past screen	1	5.0										
phrase before							1	7.0				
phrase center							1	6.0				
phrase key							1	1.0	1			
pos sent	1	4.0										
pre screen	1	5.0										
prev page				1	6.0		1	6.0				
prev screen	2	5.5										
reeval				1	5.0							
return	1	7.0	25			5			15			3
return screen			1				1	5.0				
return up							1	4.0	1			
rev para										1	7.0	
revers reader							1					
revers screen	1											
review									1	2	5.5	
review info	1	7.0										
revrs page				1	5.0							
reword phrase				1	4.0				1			
run	1	3.0	1									
run over	1	4.0										
scan							2	6.0	2			
scan text										1	6.0	2

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
scan up	1	5.0										
screen adv	1	3.0					1	7.0				
screen backup	1	4.0										
screen down	1	6.0								1		
scroll up	1	7.0	3			1				1		
sent struct	1	5.0										
senten jump	1	6.0										
skip four				1	6.0							
skip on							1	2.0				
skip page				1	5.0							
skip paragh											1	3.0
skip phrase							1	2.0		1		
skip screen	2	3.5										
smalmt capts											1	6.0
spacer							1	6.0		4		
start phrase							1	6.0				
switch screen							1	4.0				
text down	1	3.0										
top line	1	1.0										
top screen	1	4.0	1							1		
turn a round							1	5.0				
type check											1	4.0
under stand							1	4.0				
uninterpretab											1	
unique	1	1.0										
unscrm				1	3.0							
up 4 lines				1	6.0							
up four	2	5.5		1	5.0	1						
up page	2	2.0										
up screen							1	6.0				
upto down											1	6.0
word go							1	4.0				
words before	1	3.0										
wrong							1					

KEY 8 -- SCROLL UP

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
1 line up			1				1	5.0				
add line	1	6.0							2			
adding lines	1	5.0										
adv line	1	4.0										
advanc leters										1	5.0	
advce line	1	7.0										
advnce llrept				1	5.0							
bypass										1	6.0	
cap key			3						1	1	6.0	
change phrase										1	4.0	
cont						1	1	5.0				
cont phrase							1		1			
cursor down	1	5.0	3				1	6.0	1			
cursor upline				1	5.0	1						
cut off									1	1	6.0	
cutter							1	6.0				
data ffw							1	5.0				
delete			1				1	7.0	2			2
delete 1 line	1	3.0										
delete line	2	5.5	4			2	1	6.0				3
delete words	1	5.0										
don't know	2		6	1		2	14		77			
down							3	6.7	2			1
down 1 line				1	5.0		1	4.0				
down cursor	2	2.0	2						1			
down line	2	4.0	1	2	5.5				1			
down one	1	6.0		1	4.0	1	1	6.0	1			
down one line							1	4.0				
down space	1	4.0					1	7.0				1
erase			3			2	1	4.0	6			2
every five	1	4.0										
first letter			1	1	5.0							
first word	1	5.0	1									
follow on							1	6.0				
fwd screen				1	7.0							
go							1	7.0				
go on 1 line	1	4.0										
go to next	1	5.0										
going down	1	5.0										
going over							1	2.0				
imp letter							1	6.0				
info adv							1	7.0				
info advance	1	7.0										
jump page				1	6.0							
kill line 1	1	3.0										
large							1	2.0				
left off							1	5.0				
left out			1							1	3.0	
letter change										1	2.0	
line							1	6.0				
line adv	2	4.0					3	5.7				
line advanc							1	3.0		1	4.0	
line change	1	5.0		1	6.0	3			1			1
line check			1				1	5.0	1			
line clear	1	2.0										
line cont							1	4.0				
line cursor	1	6.0	1									

KEY 8 -- SCROLL UP

Label	sqf	sqr	sqs	scf	scr	sco	mqf	mqr	mqs	mcf	mcr	mco
line down	2	5.0	5						3			
line jump						1				1	4.0	1
line scan				1	4.0		1	6.0				
line scroll	2	5.0										
line shift	2	4.5					1	4.0				
line skip						1	1	6.0	1			
line up	2	3.5	6	1	6.0	4	1	5.0	5	1	6.0	
more info			1				1	1.0	1			
move line	1	2.0					1	1.0				
move line up	1	1.0										
move lineup	1	7.0										
new thought							1	4.0				
next			1	1	6.0	1						
next line	5	5.8	4			2	2	3.0	5	2	6.5	1
next page				1	7.0	2						
next phrase	1	6.0	1									
next screen	2	4.0		1	6.0				1			
no answer			2			1	1		5	1		6
nxt ln				1	5.0							
omit line 1	1	4.0										
one line				1	6.0							
page	1	2.0										
page over							1	6.0				
para starts							1	4.0				
phrase move							1	5.0	1			
prev line	1	4.0	3			2			1			
re phrase				1	3.0				1			
redue pargrp										1	4.0	
remix phrase							1	5.0				
remove word							1	7.0				
repeat	1	6.0	2	1	5.0				4			
repeat itself										1	7.0	
rephrase	1	5.0							1			
reset							1	3.0				
return			25			5	3	4.7	12			3
review							1	4.0				
review para										1	5.0	
roll screen	1	6.0	1									
roll up						1	1	5.0				
scan screen	1	3.0										
scan text										1	6.0	1
screen center							1	6.0				
screen cursor	1	1.0										
scroll	1	6.0				1						
scroll 1 line	1	5.0										
scroll down	1	6.0	3				1	7.0				
scroll down 1	1	7.0										
scroll line	1	6.0										
scroll up	1	6.0	2			1			1			
search			1			1	1	4.0	2			
second line	3	5.7										
select screen							1	4.0				
sent down	1	5.0										
sent retrak							1	6.0				
sent skip				1	4.0							
sent spacer										1	6.0	1
sentnc cont										1	6.0	

KEY 8 -- SCROLL UP

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
single return				1	7.0							
skip key			1				1	4.0				
skip line			1			2			3	1	6.0	
skip one							1	6.0				
skip word				1	6.0							
skip five				1	6.0							
slow read							1	5.0				
space up	1	5.0										
space jump				1	5.0							
stored data	1	4.0										
text up	1	6.0										
three line											1	6.0
unfin sent	1	6.0										
up shift				1	6.0							
up to down										1	6.0	2
upward reader							1	6.0				
wonder							1	4.0				
word arrang				1	5.0							
word change							1	3.0				
word jump				1	4.0							
word key							1	1.0				
word skip							1	3.0				
words erase							1	5.0				
write bkws				1	3.0							
wrong key							1	6.0	1			

KEY 9 -- INSERT

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
ad letter							1 4.0					
add	2 5.0	2		3 3.3			3 5.7	3				
add 1 space				1 5.0								
add error	1 4.0											
add in key							1 5.0					
add in space	1 3.0											
add key	2 5.0											
add let				1 5.0								
add letter	8 6.2	1		4 5.5			8 5.0	1	2 2.5			
add on		1					1 6.0	4				1
add space	4 6.5			1 5.0								
adjust							1 5.0					
auto space							1 6.0					
comple ter							1 6.0					
cor spc				1 5.0								
corect							1 5.0					
corr							2 5.0					
corr shift							1 6.0					
correc tion							1 6.0					
correction	1 7.0											
cursor insert	1 7.0											
delete letter							1 4.0					
don't know		6				2	9	68				
e	1 9.0						1 7.0					
edit	2 6.0	1		1 4.0	1							
edit space							1 6.0					
editor										1 5.0		
enter		3					1 3.0					2
enter letter	1 6.0						1 6.0					
erase		3				2	2 6.5	4	1 5.0			1
erase +space	1											
error							1 7.0	1				
error fault							1 4.0					
error spacer							1 5.0					
error vowel							1 5.0					
esc	1 5.0											
fill							1 6.0					
fill blanks	1 6.0											
fill in	2 5.5					1	4 4.5		1 4.0			
fill it in							1 1.0					
fill letter	1 5.0											
finish word	1 6.0											
fix it							1 1.0					
input space	1 5.0											
ins	1 6.0											
insert	14 6.4	1		4 6.0			6 5.5	1	2 7.0			
insert char	2 7.0											
insert charac										2 5.5		
insert func							1 6.0					
insert letter	5 6.2	2		2 2.5			1 7.0		2 6.0			
insert ltr									1 6.0			
insert space				1 7.0								
inst ltr				1 7.0								
inter space							1 5.0					
let addtn				1 6.0								
letter add										1 6.0		
letter adder							3 4.0			1 6.0		

KEY 9 -- INSERT

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
letter e	1	4.0										
letter fill							1	3.0				
letter finder							1	4.0				
letter in	1	5.0										
letter insert				1	7.0							
letter key							1	1.0	1			
letter miss	1	3.0										
letter skip	1	3.0							1			
letter space	2	5.0					1	3.0		1	4.0	
letter spacer							1	5.0				
look back							1	6.0				
make room	1	6.0										
marking space	1	2.0										
miss letter										1		
missed letter	1	4.0										
mistake							1	4.0				
move word				1	3.0							
one extra				1	3.0							
outlaw											1	2.0
place letter	1	6.0					1	6.0				
placer										2	6.0	
proof read	1	4.0										
push space							1	4.0				
put in	1	2.0					1	7.0				
put the e on											1	7.0
shift right				1	5.0							
slide											1	7.0
slide right	1	4.0										
space	1	7.0	5	1	4.0		2	7.0	3			
space add							1	4.0				
space corr				1	1.0							
space delete							1	7.0				
space error	2	6.0										
spacer							2	6.0	2			
stayin place											1	6.0
switch			1	1	6.0							
type space							1	5.0				
word corr				1	4.0							
word fix							1	6.0				
word spacer							1	6.0				

KEY 10 -- SCROLL DOWN

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
1 line down							1 5.0					
add	1 1.0	1							3			
add line top				1								
add line up	1 4.0											
add pr line	1 3.0											
add sents	1 5.0											
add text	1 5.0											1
advan key							1 7.0					
advane phrase										1 6.0		
back four	1 3.0	1										
back line	6 3.8	1		1 5.0	1				2	1 6.0		
back one							1 4.0					
back one line	1 7.0											
back phrase				1								
back scroll	1 5.0											
back sent				1 5.0								
back text	1 3.0											
back up	1 5.0								2			
back-up	1 7.0											
bck lin				1 4.0								
begin		3				2	1 5.0	2				
begin line		1				1				1 6.0		
begin phrase							1 6.0					
bkwd line				1 5.0								
change		1		1 6.0	1			1				
change letter								1		1 4.0		
change line	1 5.0	1						1				
change sent	1 6.0											
choose pangrp										1 4.0		
chosen							1 3.0					
cursor up	2 6.0	12						9		1 4.0	3	
don't know	2	4		1		1 18		50				
double advanc										1 4.0		
down 1 up 2							1 6.0					
down 2 up 1				1 2.0								
down 5							1 7.0					
down someline							1 7.0					
edit		1		1 7.0								
elim line				1 5.0								
esc arrow	1 6.0											
first bkwds				1 4.0								
forward reves										1 4.0		
four over	1 2.0											
frame							1 4.0					
frame up							1 7.0					
go nextpg				1 1.0								
hook							1 1.0					
info	1 4.0							2				
info rev							1 7.0					
insert sent				1 5.0								
insert words	1 5.0											
jump charac										1		
keep going	1 5.0									1 1.0		
keep on							1 4.0					
last line							1 6.0					
line add	1 5.0											
line adding	1 3.0											

KEY 10 -- SCROLL DOWN

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
line back-up	1	3.0										
line backup						1	1	7.0	1			
line before	4	4.7								1		
line change				1	6.0	2			1			1
line down	3	5.0	2				2	4.0	1			
line mover	1	6.0										
line return			1				1	4.0	1			
line reverse	1											
line up	3	5.7	3	1	6.0	3	1		4			
liner							1	4.0				
maint idea				1	4.0							
match mix							1	4.0				
memory			3				1	3.0				
memory call							1	4.0				
memory recall										1	6.0	
mix up							1	4.0				
mixup										1	7.0	
move backup	1	4.0										
new line			1			1	1	5.0	3			2
new para	1	4.0										
next page				1	7.0	1						
next text										1	5.0	
no answer	1		1			1	1		4	2		4
non sense							1	5.0				
over & upone							1	6.0				
page retrac							1	7.0				
para search							1	3.0				
pgraph build										1	5.0	
phrase down							1	7.0				
phrase input							1	5.0				
phrase key							1	1.0				
phrsae flow							1	3.0				
phrse center							1	6.0				
pre line	1	4.0										
prelin errep	1	6.0										
prev line	1	4.0	2	1	5.0	1	1	6.0				
print			19			4	1	5.0	12			5
prior line	1	6.0										
pull info							1	4.0				
push to go							1	1.0				
read back							1	3.0				
recall			2			1	1	6.0	3			
recall line	1	6.0										
repeat line				1	6.0							
rephrase							1	5.0				
ret	1	6.0										
return down			1				1	4.0	2			
rev line							1	4.0				
revers er										1	5.0	
revers line							1	4.0				1
review line										1	6.0	
revise							1	6.0				
reword				2	2.5							
reword phrase							1	5.0				
roll down							1	6.0				
roll screen	1	6.0										
roll up			88	1	5.0							

KEY 10 --SCROLL DOWN

Label	sqf	sqr	sqr	scf	scr	sco	mqf	mqr	mqr	mcf	mer	mco
rtn line					1 3.0							
s line return	1 4.0											
scan							1 6.0	1				
scan text										1 6.0		
screen down							1 1.0					
scroll				1 4.0								
scroll down	3 3.3											
scroll up	2 6.5			1 6.0			1 7.0					
scroll up 1	1 7.0											
search			1			1	1 4.0	1				
sent adv							1 6.0					
sent spacer										1 6.0		
sentenc end				1 4.0								
skip back			1							1		
skip phrase							1 2.0					
slow rewind							1 6.0					
spc bck				1 3.0								
start			4				1 2.0	1				
switch	1 2.0											
up 1 line				1 6.0	1	1 5.0						
up cursor	2 1.0	6			1				2			
up line	3 3.0	3			1				3			
up one	3 5.7	1			1				3			1
up to down										1 6.0		1
vary saying	1 2.0											
vert search							1 5.0	1				
word analyze							1					
word backup							1 7.0					
word conect							1 6.0					

KEY 11 --CAPS LOCK

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
add	1	5.0					1	4.0	2			
add big	1	3.0										
add line							1	5.0	1			
add on	1	5.0					3	3.0	1	1	6.0	
add phrase	3	5.7		2	3.5		2	5.0				
add phrs				1	4.0							
add text										1	6.0	
add words							1					1
add-in phrase	1	5.0										
added input	1	6.0										
ads info							1	5.0				
all cap	1	6.0					1	5.0				
all caps	4	6.5								1	5.0	
allcap										1		
big small										1	2.0	
bold type							1	5.0		2	5.0	
bottom left										1	7.0	
cap	5	5.8	7	2	5.5	1	7	5.4	5			
cap cursor	1	4.0										
cap hold							1	4.0				
cap key	1	7.0	2				1	7.0				
cap letter	2	6.0	3	1	5.0	2	1	4.0	2			1
cap lines										1	6.0	
cap lock	6	5.5					2	6.0				
cap phrase	1	6.0										
cap print	1	6.0										
capita l							1	6.0				
caple							1	4.0				
caps	3	5.3	6	9	5.8	4	2	7.0	2	2	5.5	
caps all							1	6.0				
caps hold	1	6.0	1									
caps lock	6	6.7	2				3	4.0	1			1
caps on			1	1	5.0							
caps shift	1	3.0										
capt lock	1	5.0										
captlz nadata				1	5.0							
carry on							1	6.0				
case			1	1	6.0							
case change	1	5.0										
comma type							1					
comp				1	5.0							
comple senten										1	6.0	
cont key										1	5.0	
contd	1	5.0										1
continuer							1	7.0				
data							1	4.0	1			
data print							1	6.0				
don't know			4	1			10		40			
end phrase				1	5.0				2			
enter quote							1	6.0				
etc							1	5.0	1			
excite							2	3.5				
exclam	1	3.0										
expres excite										1	6.0	
extend point							1	2.0				
eye catch							1	5.0				
fill in				1	4.0				1			

KEY 11 --CAPS LOCK

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
five facts							1	5.0				
get text	1	6.0										
high light										1	5.0	1
higher cased	1	1.0										
insert			1				1					
insert phrase	1	7.0		1	6.0							
large letter							3	4.3	2			
large print							1	5.0	1			
large type							1	7.0				
larger	1	4.0										
letter size										1	6.0	1
lg print				1	7.0							
lock shift	1	7.0										
locked cap							1	7.0				
longer bigger				1	2.0							
lower/caps	1	7.0										
major										1		1
memory	1	6.0	2									
miss sent							1	6.0	1			
more info	1	5.0							1			
next cap	1	6.0										
next phrase	1	6.0										
not finish							1	6.0				
paste caps				1	4.0							
phrase							2	5.0				
phrase add							1	4.0				
phrase insert	1	6.0										
press cap	1	5.0										
print add				1	7.0							
print caps	1	5.0								1		
printe rkey							1	6.0				
quote	1	7.0										
raised letter							1	6.0				
recall			2			1	2	5.5	1			
retiev phrase				1	5.0							
run on	1	7.0					1	2.0				
sent caps	1	5.0										
shift	1	7.0	12			1	2	6.5	3			2
shift key							2	7.0				
shift lock	2	7.0										
small letter							1	6.0		1	6.0	
space caps	1	4.0										
start again							1	4.0	1			
state input							1	5.0				
textend	1	5.0										
topic										1	7.0	
type change							1	7.0				
type normal	1	5.0										
up to down										1	6.0	
upcase letter							1	4.0				
upper case	2	4.0										
word add	1	5.0										
word italic				1	5.0	1						
writer										1	3.0	

Y 12 --



bel	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
line up	1 7.0											
move line	1 5.0											
tick above				1 3.0								
tick four	1 4.0											
tick line	1 6.0			1 6.0			1 7.0	1				
tick lines										1 6.0		
tick return	1 2.0											
tick space	3 5.7											
tick track							1 5.0					
tick up							1 3.0	1				
begin line			1	1 5.0								
exp line							1 7.0					
backward line										1 6.0		
bottom up										1 4.0		
break							1					
change sen							1 4.0					
change word							1 2.0					
learn phrase							1 5.0					
limb screen	1 6.0											
limer										1 5.0		
rs bkwd				1 2.0								
ur up	1 6.0											
ursor advance										1 4.0	1	
ursor change							1 2.0	1				
ursor rise							1 5.0					
ursor skip							1 6.0	1				
ursor up	10 5.8	2					8 4.3	1	2 5.5	1		
ursor up 1	2 4.5											
ursor updown							1 4.0					
ursor upline				1 6.0								
ec ladder							1 5.0					
on't know			4				2	38				
ownone space							1 4.0					
ownto up										1 6.0		
rug button							1					
dit text										1		
nd begin				1								1
ind			1				1 5.0	1				
irst up				1 5.0								
ront line	1 5.0											
o up				1 5.0			1 5.0					
igher up	1 5.0											
mposs ible										1 2.0		
ndent							1 2.0					
ndex	1 6.0	1										
nfo							1 6.0	1				
ump back							1 7.0					
ump return										1 5.0		
ump up	1 7.0											
evel up							1 6.0					
ine above	2 4.5			1 6.0								
ine back	1											
ine backup				1 5.0			1 4.0					
ine before							1 6.0					
ine change				1 6.0	1			1				1

KEY 12 --



Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
line jumper							1	5.0				
line key										1	6.0	1
line number							1					
line return	1	3.0							1			
line space				1	1.0				1			
line up	3	5.7		3	5.7		4	5.7				
main word							1	6.0				
main words	1	2.0										
move cursor			1				1	4.0	4			
move up	2	6.0		1	5.0		1	5.0				
moved3 spacup										1	7.0	
one up	2	4.5										
phrase check							1	4.0				
prev line	2	7.0		1	6.0							
print bkws										1	6.0	
print shift				1	6.0							
return labove	1	2.0										
return back	1	5.0	1						1			
return down			1				1	4.0	1			
return for	1	2.0										
return key			1				2	7.0				2
return one							1	5.0				
return up							1	4.0				
rreturn upone	1	3.0										
rev return	1	4.0										
rever	1	6.0										
rever spacer										1	7.0	
revers line										1	7.0	
rtn above				1	5.0							
scan							1	3.0				
search			1			1	1					
search key							1					
search up										1	5.0	
sent backspa										1	4.0	
sent hop				1	4.0							
sent to sent										1	6.0	
sentce jump				1	4.0							
sentence rise							1	4.0				
skip back	1	7.0										
skip lines			2				1	1.0	1			
slow return							1	6.0				
sub lin				1	3.0							
take back							1	4.0				
up	3	4.0		2	5.0		6	6.8		1	7.0	
up 1 line				1	5.0							
up a line	3	5.7										
up above							1	6.0				
up arrow	1	7.0										
up cursor	6	4.0		1	6.0		2	6.0				
up line	3	4.7		1	6.0		3	4.7				
up lines	1	3.0										
up one	1	5.0		1	4.0		3	5.3		1	6.0	
up one line	1	6.0					2	3.5				
up para	1	7.0										
							3	4.0				

KEY 12 --| ↑

Label	sqf	sqr	sqq	scf	scr	sco	mqf	mqr	mqq	mcf	mcr	mco
upward												1 3.0
upward cursor												1 4.0
useles key												1 7.0
vert												1 6.0 1
vert search												1 6.0

KEY 13 -- RETURN

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
across							1	4.0				
add lines										1	6.0	
advanc	1	3.0					1		1			
advanc line										1	7.0	
advce cursor	1	6.0										
advnce	1	4.0										
another line							1	5.0				
assure							1	2.0				
back down	1	2.0										
beg line				1	6.0							
below one	1	3.0										
blank time	1	4.0										
change line			1				1	4.0				
column start							1	2.0				
contd											1	7.0
continue	1	3.0										
crossing											1	2.0
crsr cont				1	5.0							
cur move							1	4.0				
cursor down	3	5.0					1	2.0				
cursor down 1	1	6.0										
cursor dwnwrđ											1	5.0
cursor nline				1	3.0							
dont know	1		3			5	7		53			2
double space				1	7.0		1	7.0				
double two				1	3.0							
down							2	3.0			1	6.0
down cursor	2	2.0					1	7.0				
down key							1	3.0				
down left	1	4.0										
down line	1	6.0					1	6.0				
down one				1	5.0		1	4.0				
down para	1											
down shift							1	7.0				
down skips	1	3.0										
down space											1	5.0
down ward	1	5.0										1
enter	2	6.0	1									2
etc							1	5.0				
forward	1	6.0							1			
frwd line							1	6.0				
frwd space											1	6.0
go down				1	4.0							
go to margin	1	7.0										
index	1	6.0										
insert line	1	6.0										1
jmp lin				1	6.0							
jump key			1				1	4.0				
jumper							1	7.0				1
left drop				1	4.0							
line change				1	6.0		1	7.0		1	6.0	
line down	2	5.5					1					
line exact							1	3.0				
line ext							1	4.0				
line focus							1	1.0				
line index							1	7.0				
line jump				1	5.0						1	5.0

KEY 13 -- RETURN

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
line key										1 6.0		
line skip				1 6.0			1 7.0					
line space							1 6.0					
line spacer										1 7.0		
line spaces	1 6.0											
lower				1 6.0								
lower line	1 6.0											
margin							1 7.0					
miss word							1 4.0					
move cursor			1				1 4.0		3			
move down				2 6.0			1 6.0		1			
move on	1 7.0											
moves down 2											1 7.0	
new line	1 7.0			1 6.0			2 3.0		1	2 2.0		
next	1 7.0			1 4.0								
next level							1 5.0					
next line	4 5.2			1 7.0		1	5 6.2			1 7.0		
nxt line				1 6.0								
one down	1 4.0											1
open line							1 4.0					
phrase skip							1 5.0					
phrase space							1 5.0					
place finder										1 7.0		
press ahead	1 7.0											
reset sntnce							1 2.0					
ret line										1 6.0		
return	18 5.6	7		5 6.2			11 5.7		1	2 6.0		1
return dnpce										1 4.0		
return down	1 6.0						1 1.0					
return func							1 7.0					
return key	1 6.0									1 6.0		1
return spacer							1 5.0					
right space							1 6.0					
sentence							2 5.5					
single line	1 5.0											
single space	1 6.0	1										
skip down							1 7.0					
skip key	1 6.0											
skip line	1 6.0			2 6.0			3 5.7					
skip lines	2 4.5						1 6.0					
space	3 5.7	2							3			
space change							1 4.0					
space cursor		1					1 6.0					
space down	1 7.0											
space key		2					1 2.0					
space line				1 5.0								
spacer							2 6.5					
start line	1 1.0											
time aft time							1 1.0					
ver down	1 3.0											
vert				1 6.0								
vert spacer							1 6.0					
word spac				1 4.0								

KEY 14 -- HOME

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
across para	1	4.0										
after might							1	6.0				
angle left										1	6.0	
back							1					
back 1 sntnc				1	4.0							
back exp							1	7.0				
back line							1	5.0				
back para	1	6.0										
back scan							1	6.0				
back to start	1	7.0										
back up							1	6.0				
back up top							1	4.0				
befor after											1	3.0
beg end				1	5.0							
beg of para	1	4.0										
beg text				1	3.0							
began							1	2.0				
begane ending											1	7.0
begin	3	2.3		2	6.5		2	4.0				
begin & end				1	4.0							
begin again	2	6.0					3	6.0				
begin key	1	5.0										
begin line	1	5.0										
begin over							1	5.0				
begin para				2	5.5							
begin return	1	5.0										
begin sent				1	6.0							
begin text	1	7.0					1	2.0				
beging parag	1	7.0										
bgning para	1	5.0										
bksp para							1	6.0				
bspace top	1	6.0										
chang ing											1	2.0
check over							1	5.0				
cont sent											1	6.0
corner cursor	1	3.0										
crsr rtrn				1	4.0							
cursor change							1	5.0				
cursor front											1	6.0
cursor home	1	6.0										
cursor jump							1	5.0	1			
cursor 1 angl							1	6.0				
cursor repeat							1	1.0				
cursor return	1	3.0					1	4.0			1	7.0
cursor to beg							2	6.5				
cursor up	2	5.5					1	3.0			1	1.0
diag pos				1	6.0							
didnt finish							1	5.0				
don't know			4				1		37			
dont know			3	1		4	11		42			2
down arrow	1	3.0										
down up											1	6.0
edit line											1	6.0
end			4				1	4.0	2			
end begin											1	5.0
end beging											1	6.0
end screen				1	5.0							

KEY 14 -- HOME

Label	sqf	sqr	sqs	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
end to first	1	6.0										
end to start	1	5.0										
finish			4				1	4.0	1			
first char				1	6.0							
first last				1	4.0							
first letter	1	5.0										
first word	1	5.0										
fixer							1	2.0				
go back	1	3.0	2				1	2.0				
go to begin	1	5.0										
go to start	1	5.0										
go to top							1					
goto a	1	6.0										
home	2	6.0		1	7.0		2	4.5	1			
home cursor	1										1	7.0
home func							1	2.0				
home page				1	7.0							
last first	1	5.0									1	6.0
move back							1	4.0				
move cursor	1	5.0					1	4.0	2			
next screen							1	4.0				
no answer			1			1			4	1		3
no cursor			2				1	2.0	1			
no ending							1	6.0				
opp end				1	2.0							
page home	1	6.0										
para backup				1	5.0							
para key							1	7.0				
para restart							1	6.0				
prevs sentce				1	4.0							
print relay											1	7.0
proc sent				1	5.0							
punc error							1	3.0				
re phrase							1	5.0				
re start							2	3.5				
reback							1	4.0				
recall			2	1	6.0				1			
repeat			2				1	5.0	3			
restart							1	4.0				
ret to start	1	6.0										
retrace	1	5.0										
return	7	5.3					1	6.0			1	6.0
return back	1	7.0							1			
return begin	2	4.5					1	5.0				
return check	1	4.0										
return cursor	1	6.0		1	6.0		1	6.0				
return home											1	4.0
return key											1	5.0
return para				1	5.0							
return start	4	3.2					2	7.0				
return t left				1	5.0							
return to	1	6.0										
return to beg				1	5.0							
return to top	1	7.0										
return top	1	4.0										
revers page											1	4.0
revese cursor							1	2.0				

KEY 14 -- HOME

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
rewind								1	6.0			
rewr								1	4.0			
rewrit				1	4.0							
rtn beg				1	5.0							
screen return	1	2.0										
sent jump	1	6.0										
start	2	3.0	2							1		
start again								1	6.0			
start here								1	7.0			
start over	2	4.5						4	5.5		1	6.0
start point								1	4.0			
to top left	1	6.0										
top left								2	5.0		1	7.0
top of file	1	3.0										
top return	2	5.0										
top screen	1	4.0						1	3.0			
under line								1	1.0			
up four				1	6.0							
up left	1	1.0										
up return	1	4.0										
wooo backup								1	7.0			

KEY 15 -- TAB

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
4ward6 spaces					1 6.0							
6 char advanc	1 5.0											
6 right							1 5.0					
6 space cur	1 4.0											
6-sp adv							1 4.0					
6space ahead							1 6.0					
account							1 4.0					
adjust line											1 6.0	
adv 6	1 6.0											
adv 6 letter	1 3.0											
adv cursor											1 7.0	
adv six					1 5.0							
advace charac											1 4.0	
advanc							1 4.0					
advance six	1 6.0											
advce six	1 5.0											
after 5					1 6.0							
ahead	1 5.0											
ahead seven							1 6.0					
b m e word					1 3.0							
back wards											1 7.0	
center space	1 4.0											
check letter							1 4.0					
check phrase							1 4.0					
check spell					1 4.0		1 6.0					
check words	1 3.0						1 6.0					
col							1 6.0					
con sounds							1 4.0					
cursor 6	1 5.0											
cursor advace											1 4.0	
cursor advan							1 4.0					
cursor jump							1 3.0					
cursor r 6x	1 2.0											
cursor right	2 5.5											
cursor scan											1 5.0	
cursor six	1 6.0											
cursor skip							1 7.0					
cursor wr					1 1.0							
dash					1 4.0							
divide word	1 3.0											
dont know			3	1		3	14		28			2
dont know'							1					
emphasiz key							1 6.0					
error causer							1 1.0					
error free							1 2.0					
fast for											1 7.0	
find							1 7.0					
five space	1 5.0											
forward							1 4.0					
forwrd six											1 5.0	
foward cursor							1 7.0					
fower march							1 1.0					
front space							1 7.0		1			
frwd							1 7.0					
frwd space6											1 6.0	
fwd five					1 6.0							
fwrđ 5 spc					1							

KEY 15 -- TAB

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
go 6 spaces	1	7.0										
goto key	1	6.0										
half word				1	6.0							
hop 5				1	5.0							
indent six	1	5.0										
jump				1	2.0		1	2.0				
jump 6 space				1	3.0							
jump key	1	4.0										
jump six							1	3.0				
jumper										1	6.0	
left right										1	6.0	1
letter advanc	1	2.0										
letter cursor	1	5.0										
letter search							1	5.0				
letter skip							1	6.0				
line cursor	1	1.0										
mid move							1	1.0				
mid word	1	6.0		1	5.0							
middle	1	5.0		2	5.5							
midway plus							1	3.0				
move 5 space							1	6.0				
move 6 right	1	6.0										
move 6 spaces	2	5.5										
move cursor							2	5.0				
move inward	1	1.0										
move left							1	5.0				
move over	1	4.0										
move right							1	6.0				
move six	1	5.0										
moved charac										1	4.0	
no answer	1					1	1		3			3
over 6 spaces							1	4.0				
over char				1	3.0							
over five	1	4.0										
over seven	1	5.0										
over six	1	5.0		1	7.0		1	3.0				
para spacer	1	6.0										
pass by							1	3.0				
plus six	1	2.0										
preset tab 7				1								
read							1	6.0				
remn the same										1	7.0	
repeat	1	6.0	1						3			
right 6							1	7.0				
right arrow	1	7.0										
rt six spaces	1	6.0										
s finder							1	4.0				
search	1	3.0		1	4.0							
search char										1	6.0	
shift cursor	1	7.0										
six advanc							1	5.0				
six jumper							1	4.0				
six move							1	4.0				
six over	1	7.0								1	7.0	
six skip	2	4.0					1	5.0				
six space	3	4.7					1	6.0		1		
six spacer							1	3.0				

KEY 15 -- TAB

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
six spaces	1	5.0										
skip			1	1	4.0		1	6.0		2	3.5	
skip 6	1	6.0										
skip five	1	3.0		2	4.5		1	6.0				
skip letrs				1	3.0							
skip letter	1	7.0										
skip ltrs				1	5.0							
skip six				1	4.0		3	2.7				
skip space							3	4.3				
skp six				1	4.0							
sp-ahd six	1	5.0										
space	1	3.0	1				2	4.0	1			
space bar							1	7.0				
space cursor	1	3.0										
space five										1	6.0	
space jumper							1					
space key	1	3.0	1									
space six	2	4.0										
spell check	1	5.0										
switcher							1	6.0				
syllbol brec										1	3.0	
tab	7	6.2					3	4.7		1	7.0	
tab 6	1	6.0										
tab six	2	7.0										
un needed										1	7.0	
word	1	4.0										
word check							1	7.0				
word split				1	6.0							

KEY 16 -- SHIFT

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
1 cap							1 4.0					
adapt key							1 2.0					
add a letter	1 6.0						1 1.0					
add at cursor	1 5.0											
add delete							1 4.0					
add letter	1 6.0						1 2.0					
add on							1 6.0					
add one	1 2.0						1 3.0					
add word	1 7.0											
add words											1 7.0	
added2 letter											1 7.0	
advance one	1 6.0											
auto shift							1					
beginner							1 7.0					
big & little							1 6.0					
big & small							1 4.0					
big letter							1 4.0					
cap	7 5.3			1 6.0			5 6.2					
cap key	2 7.0											
cap l-cse				1 1.0								
cap letrs				1 5.0								
cap letter	3 3.3			2 5.0			2 4.0				1 4.0	
cap ltrs											1 6.0	
cap noncap				1 1.0								
cap small	1 3.0											
cap to small							1 2.0					
cap type											1 6.0	
capital							1 4.0					
caplt letters											1 6.0	
caps	6 6.2			4 6.3			2 4.0					
caps hold	1 6.0											
caps lock	2 7.0						1 6.0				1 6.0	
caps on	1 5.0											
caps temp							1 4.0					
capt	1 6.0			1 2.0								
case	1 6.0											
change caps											1 6.0	
change case							1 6.0					
change letter							1 5.0					
char cap	1 5.0											
chr adv							1					
cont				1 4.0								
continue key							1 6.0					
copy letter	1 7.0											
cptl letter	1 4.0											
cursor			2				1 7.0		1			
cursor cap				1 6.0								
dbl prnt				1 5.0								
dis let				1 6.0								
dont know			3	1		2	12		16			2
double case	1 4.0											
double letter	1 3.0											
double up				1 5.0								
down up captz				1 4.0								
down ward											1 7.0	
error							1 2.0					
extra				1 2.0								

KEY 16 -- SHIFT

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
filling in							1	4.0				
front space							1	7.0				
hidden mess							1	6.0	1			
insert	1	6.0										
insert caps											1	4.0
insert letter	2	3.5										
inst caps				1	6.0							
inter face							1	4.0				
just type							1	5.0				
l							1	1.0				
l i	1	7.0										
l needed	1	1.0										
l-cap				1	5.0							
large alpha	1	1.0										
large letter							2	5.5				
large print							1	5.0				
large small							1	4.0				
left right											1	6.0
letter							1	6.0				
letter adv	1	4.0										
letter key							1	7.0				
letter needed							1	5.0				
letter print							1	6.0				
letter select							1	4.0				
letter shift	1	6.0										
letter size											1	6.0
logic							1	6.0				
lower case	1	4.0										
major											1	
mult caplet				1	2.0							
new letter							1	5.0				
new word							1	4.0				
next letter	1	5.0					1	5.0				
next next	1	5.0										
no answer							1	2		1	1	2
not done				1	4.0							
one over							1	6.0				
one right											1	6.0
ord key											1	5.0
press caps	1	5.0										
press no 1							1	4.0				
print	1	5.0	18	1	5.0	3	2	7.0	10	1	7.0	4
print char											1	6.0
printer			2								1	5.0
raised							1	3.0				
set							1	2.0				
shift	12	6.6		1	5.0		3	7.0		2	6.5	
shift caps	1	7.0										
shift hold							1	4.0				
shift lk-rel	1											
single space	1	6.0										
slow add							1	6.0				
slowly							1	2.0				
space	1	6.0								1		
space key	1	6.0										
typ				1	1.0							
type							2	5.0				

KEY 16 -- SHIFT

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
type again	1	1.0										
type for										1	6.0	
type l				1	4.0							
type one	1	5.0										
var caps	1	3.0										
very wrong							1					
word cap	1	5.0		1	2.0							
word italic				1								
word write							1	5.0				

KEY 17 -- UNDO

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
add a sent.	1	4.0										
add delete							1	4.0	1			
add line							1					
back again							1	4.0				
back forth							1	2.0				
blank fill							1	4.0				
cancel							1	7.0				
change			1	1	6.0				1			
change line	1	7.0										
check							1	6.0				
clear a line							1	7.0				
clear line	1	3.0		1	5.0		2	5.0				
cont phrase							1					
cut off							1	4.0				
del							1	7.0				
del add				1	5.0							
del line	1	4.0										
del sent				1	6.0							
del/add	1	6.0										
del/undel	1	5.0										
delete			1						2	1	4.0	1
delete add-in	1	5.0										
delete appear	1	6.0										
delete cover				1	6.0							
delete line	4	6.3		2	6.0					3	6.3	
delete recovr				1	5.0	1						
delete remit							1	6.0				
delete return	1	4.0	1	1	1.0		1	7.0				
delete row				1	6.0							
delete sent											1	3.0
delete sentne											1	6.0
delete text							1				1	7.0
delete/return	1	4.0										
don't know	2		2				9		28			
drop add	1	6.0										
edit	1	6.0										
edit return	1	4.0										
erase	2	5.5	1	1	6.0	1	1	4.0	3			1
erase & store	1	5.0										
erase appear	1	4.0					1	1.0	1			
erase back	1	3.0							1			
erase line	1	7.0		3	5.0		3	5.3				
erase read							1	6.0				
erase recall							2	5.5				
erase replace	1	7.0										
erase return	1						1	4.0				
erase senten											1	5.0
erase sentns											1	6.0
erase+reprint	1	2.0	1									
erase/print	1	6.0										
erase/reappr				1	6.0							
erased				1	2.0							
eraser							1	5.0			1	6.0
fade rtn				1	4.0							
find	1	5.0							1			
flash back	1	3.0										
forget							1	4.0				

KEY 17 -- UNDO

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
go back	1	2.0	1									
gone back							1	4.0				
guess							1	7.0				
hide line							1	6.0				
idea insert				1	5.0							
immed. memory	1	1.0										
insert line										1	5.0	
inst delete				1								
inv. ln delet	1	3.0										
l. omit./rem.	1	5.0										
lastln fadeou										1	7.0	
left out	1	6.0										
linage memory	1	6.0										
line addner							1	4.0				
line del							1					
line delete	1	4.0		1	7.0		3	5.3		2	6.5	
line dis/ap	1	6.0										
line erase				2	6.5		4	4.5		1	6.0	
line eraser	1	5.0										
line gone				1	6.0		1	3.0				
line in-out				1	6.0							
line inset							1					
line omit							3	5.7				
line outbck				1	4.0							
line remove							1	2.0				
line repri							1	4.0				
line return							1	7.0				
lost found							1	5.0				
magic act	1	2.0										
memory inset							1	6.0				
memory key							1	7.0	1			
mind reader							1	2.0				
miss sent							1	6.0				
more info							1	4.0				
move down							1	5.0				
move text	1	5.0										
never change										1	2.0	
next line				1	5.0							
old line	1	6.0										
omit	2	5.5							1			
omit line	3	4.7										
one down										1		
oopsi line	1	1.0										
orgnl line	1	3.0										
out sent							1	4.0				
part	1	2.0										
phrase eraser							1	5.0				
phrase move							1	7.0				
plt ln				1	5.0							
print line	1	6.0										
redo							1	1.0				
reject										1	7.0	
remove line	1	7.0					1					
remove save										1	6.0	
repeat			1				1	6.0	2			
rest.	1	3.0										
restor line	2	6.0										

KEY 17 -- UNDO

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
retrv stack				1	4.0							
return line	1	5.0					1	5.0				
return text	1	6.0	1									
sent blkout										1	7.0	
sent eraser										1	5.0	
sent. zap	1	4.0										
sentence star							1	6.0				
sentnc key							1	1.0				
skip			1			1	2	5.5	1			2
space repeat	1	2.0										
spacer change							1	5.0				
store memory	1	5.0										
subt. line	1	6.0										
subtra add							1	5.0				
take away	1	7.0										
take out							3	4.7	1			
temp delete	2	4.0										
temp. erase	1	5.0										
turn back	1	5.0										
two same				1	4.0							
un-delete	2	5.0										
up down										1	6.0	
verify info							1	6.0				
word find	1	3.0										
wording							1	6.0				

KEY 18 -- ON/OFF

Label	sqf	sqr	sqs	scf	scr	sco	mqf	mqr	mqs	mcf	mcr	mco
add							1 5.0	1				
blank				1 4.0			1 6.0					
blank appear							1 4.0					
blank out				1 6.0			1 5.0					
blank remove							1 6.0					
blank return							1 6.0					
blank screen	2 2.5						4 3.7			2 5.0		
blank text										1 6.0		
blank-filled	1 3.0											
blkout screen										1 7.0		
bring back	1 5.0											
cancel back	1 6.0											
change screen			2				1 6.0	1				
change up							1 7.0					
clear				1 6.0			3 7.0					
clear csreen	1 7.0											
clear entry	1 6.0											
clear memory	1 4.0											
clear recall	1 5.0						3 6.0					
clear repeatn	1 5.0											
clear return	3 4.3						1 7.0			1 6.0		
clear screen	8 5.2			4 4.5			4 5.2			2 7.0		
clear/return	1 3.0											
clr add				1 5.0								
come back	1 5.0											
copy							1 6.0					
data change							1 4.0					
del app scren	1 5.0											
del para				1 5.0								
del to ins							1 6.0					
delete			1				1 7.0			1 7.0		
delete recovr				1 3.0								
delete repeat							1 6.0					
delete return	1 6.0											
delete screen	1 7.0			2 6.5								
delete text				1								
delete type										1 6.0		
dis appear							1 4.0					
disapearer										1 6.0		
dlt return							1 7.0					
don't know			2				11	17				
draw blank							1 4.0					
drive engage	1 5.0											
enter										2 6.5		
enter data							1 6.0					
eras & st scr	1 3.0											
erase	1 7.0			1 7.0			3 3.0					
erase add				1 3.0								
erase appear							1					
erase back							1 4.0					
erase para	1 6.0											
erase pg				1 4.0								
erase restore	1 5.0											
erase screen	2 4.5			1 6.0						1 6.0		
erase+reprint	1 2.0											
escape	1 6.0											
escape rtn				1 4.0								

KEY 18 -- ON/OFF

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
every other							1	4.0				
exit	1	4.0	2									
fade out										1	6.0	
fast think							1	3.0				
forgot print							1	4.0				
get	1	5.0										
go erase	1	1.0										
gone				1	5.0							
hide	1	7.0										
hide screen							1	6.0				
hold							1	5.0				
home							1	4.0				
lacks print							1	6.0				
list	1	6.0										
memory	1		1									
memory key							1	7.0				
memory store	1	6.0										
middle gone				1	4.0							
miss comput							1	4.0				
new page				1	2.0							
no answer											1	
none				1	6.0							
none w date											1	7.0
off switch											1	7.0
old							1	7.0				
old screen	1											
omit + return	1	5.0										
on off							1	6.0			1	4.0
on/off											1	5.0
oops page	1	2.0										
p omit/rem	1	5.0										
page blank				1	6.0							
page erase	1	2.0		1	6.0							
page remove							1	6.0				
pause				1	6.0							
power	1	6.0										
put it back							1	6.0				
recall	2	5.5					1	7.0				
recall info	1	6.0										
reload	1	6.0										
remains											1	2.0
remove data							1	5.0				
remove reset							1	4.0				
remove screen	1	7.0										
repeat							1	6.0				
rest. screen	1	5.0										
restor screen	1	7.0										
restor text	1	6.0										
return copy	1	4.0										
return text	1	6.0										
save	1	4.0					1					
screen	1	6.0										
screen blank							1	4.0				
screen clear				1	6.0		2	6.0				
screen d/a	1	5.0										
screen delete				1	4.0							
screen dis/ap	1	6.0										

KEY 18 -- ON/OFF

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
screen erase							3	2.3				
screen gone							1	4.0				
screen out											1	6.0
screen pause							1	7.0				
screen reprin							1					
screen toggle	2	3.5										
self test							1	6.0				
set date											1	6.0
space							1	4.0				
space/return	1	6.0										
start	2	4.5					1	4.0				
start run							1	6.0				
temp erase	1	3.0										
tempy clear					1	4.0						
vanish recall	1	7.0										
void unvoid							1	4.0				
zap again	1	6.0										
zapp					1	4.0						

KEY 19 -- HELP

Label	sqf	sqr	sqr	scf	scr	sco	mqf	mqr	mqr	mco	mcf	mcr	mco
add							1	5.0					
assit	1	6.0											
basic menu											1	6.0	
block											1	5.0	
change	1	2.0					1	6.0					
change data							1	4.0					
change frame	1	6.0											
change help											1	6.0	
change screen	2	6.0					2	3.5	1		1	5.0	
changer											1	6.0	
choice							1	6.0					
chose letter							1	4.0					
clear new							1	4.0					
ctrl h	1	5.0											
data							1	4.0					
dazed							1	3.0					
delete	1	5.0											
dict												1	6.0
diff ideas				1	4.0								
direct help	1	6.0											
disappears											1	4.0	
don't know	2						17	0.2					
dont know				1			5				1		
edit help	1	2.0											
ender				1	2.0								
enter help	1	6.0											
esc h	1	7.0											
escape			1	2	5.5								
exit	2	6.0											
five left											1	6.0	
food key							1	1.0					
for help							1	4.0					
forget info	1	7.0											
func change							1	6.0					
give answer											1	5.0	
go back	1	1.0											
go to menu	1	4.0											
graph helper							1						
help	18	6.1		10	6.4		11	4.5			6	6.2	
help info	1	5.0											
help key	3	6.0		1	4.0								
help menu	11	6.0		4	6.5		12	6.0					
help rescue	1	4.0											
help screen	2	5.0											
help!	1	6.0											
helper							1	5.0					
hidden mess							1	4.0					
info							1	5.0					
infor											1	6.0	
j help kblock											1	7.0	
jneed assist							1	5.0					
line info							1	4.0					
load menu	1	6.0											
lost							1	2.0					
mem.	1	3.0											
memory	1	4.0											
menu	3	5.3		2	6.5		4	6.0					

KEY 19 -- HELP

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
menu help											1	6.0
menu kick				1	7.0							
menu ret	1	6.0										
menu return							2	6.5				
menue										1	4.0	
need ref							1	6.0				
new							1	5.0				
new ideas	1	4.0										
new info	1	6.0										
new screen	2	3.5										
next page				1	6.0							
no answer				1						1		1
other info	1	2.0										
play							1	3.0				
read data							1	6.0				
recret				1	1.0							
return menu				1	7.0							
return screen	1	4.0										
run	1	5.0										
scram mode	1	3.0										
screen change							1	6.0				
screen print							1	4.0				
selectionkey							1	5.0				
symbol										1	7.0	
text change				1	1.0							
to menu				1	7.0							
work man							1	1.0				
wrong key							1	5.0				

KEY 20 -- PRINT

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
add none							1	3.0				
alter screen				1	2.0							
appear cursor	1	6.0										
back ground										1	5.0	
border				2	3.5					2	5.0	
border change										1	6.0	
brdr change				1	6.0							
carry to far							1	6.0				
change screen				1	4.0							
cheap metal							1	4.0				
clear cursor	1	5.0										
colin											1	6.0
colon 1st pr				1	3.0							
comple phrase							1	1.0				
cursor	2	6.5					1	6.0				
cursor del							1	7.0				
cursor delete							2	5.5				
cursor dis/ap	1	6.0										
cursor erase							1	6.0				
cursor exit	1	6.0										
cursor finish							1	5.0				
cursor gone							2	0.5				
cursor leave	1	6.0										
cursor omit							1	4.0				
cursor remove							2	4.0				
delete							1	5.0				
delete cursor	3	5.3										
design				1	2.0							
design differ										1	5.0	
design frame										1	6.0	
diff plain				1	4.0							
dis cur							1	4.0				
dis page				1	5.0							
done							1	4.0				
dont know	3			1			11			1		
end	4	4.5					2	5.0				
end cursor							1	6.0				
end key	1	4.0										
end line	1	6.0					1	5.0				
end para	1	4.0										
end phrase							2	5.5				
ender							1	4.0				
ending							1	5.0				
enlarger											1	7.0
enter	1	6.0										
equal	1	7.0										
erase											1	4.0
extra space	1	4.0										
find place							1	5.0				
finish	4	4.0					1	5.0				
hard copy				1	5.0		1	5.0				
hide cursor	1	6.0										
high light											1	6.0
hold on							1	2.0				
img prnt				1	3.0							
italic key											1	6.0
jprint				1	7.0							

KEY 20 -- PRINT

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
line end							1	7.0				
made three							1	7.0				
mar				1	1.0							
margin set										1	7.0	
more words							1	6.0				
new line							1	5.0				
next cursor	1	4.0										
no answer							1					
no change	1	6.0										
no cursor	2	5.5					1	5.0				
omit							1	4.0				
omit cursor							1	7.0				
on a scale											1	7.0
out in paper				1	4.0							
outline				1	4.0							
page print				1	4.0							
phrase stop							1	5.0				
print	18	6.3		3	6.0		10	6.0		4	6.0	
print copy				1	7.0					1	7.0	
print deco				1	5.0							
print frame				1	6.0							
print key	1	6.0					1	7.0				
print lines	1	5.0										
print o				1	3.0							
print out				1	6.0		4	6.5		1	5.0	
print page	1	7.0										
print phrase										1	7.0	
print screen	7	5.9					1	7.0				
print send							1					
print symbol				1	2.0							
printer	2	4.0										
prt statmt				1	6.0							
punc				1	2.0							
remove							1	6.0				
remove cursor	2	6.5					4	6.3				
repeat	1	6.0					1	7.0				
return back							1	4.0				
screen change				1	5.0							
skip	1	7.0										
space right	1	4.0										
spacer delete							1	6.0				
stay colon							1	2.0				
stop							1	4.0				
take out							1	1.0				
turn over							1	4.0				
two over	1	7.0										
what next	1	5.0										
widen border											1	4.0
word ecnol							1	5.0				
zap left	1	4.0										

Appendix C

Verbally Translated Versions of the
Symbolic Labels Offered
by Military and Civilian Subjects
for 20 Keyboard Functions

Note. The following abbreviations are used in the column headings:

s = STUDENTS (Civilian sample)

q = QUESTIONNAIRE-demonstrated data

f = FREQUENCY with which the label was offered

r = mean RATING where 1 = extremely uncomfortable and 7 = extremely comfortable

o = the number of OTHER remaining instances where the label was used on some other key by subjects within that group

c = COMPUTER-demonstrated data

m = MILITARY subjects

Thus, the column headed "sqf" indicates the frequency with which civilian subjects exposed to the questionnaire offered each of the verbal labels listed in column one. The column headed "mcr" indicates the mean rating provided by military subjects exposed to the computer-demonstrated BEFORE/AFTER examples.

KEY 1 -- END

Label	sqf	sqr	sqa	scf	scr	sca	mqf	mqr	mqo	mcf	mcr	mco
b up arrow a							1 6.0					
backward triangle						5				1 5.0		3
begin and end							1 1.0					
begin to end	2 3.0						2 3.5					
change	1 3.0			1 6.0	1				1			
check			2				1 6.0	8				1
cursor			6			2	2 3.5	13		1 6.0		2
cursor begin and end	3 6.0	1		2 4.0			3 4.7					1
cursor begin to end	21 5.0	1		5 5.4	3	13 5.3		1		5 2.8		
cursor down arrow	2 5.0	16			8				19			9
cursor end		1			1	3 6.0		2				
cursor end to begin		22			4	1 2.0		17				8
cursor in circle		2				1 6.0						
cursor left example		6				1 6.0		4				
cursor right arrow	7 3.3	21			7	3 4.7		30				5
diagonal arrow	1 4.0	1			2			1		3 6.0		
diagonal down arrow				4 4.8	1	1 6.0				1 6.0		
don't know		45			6	19		241				
dot	2 4.0	3		1 5.0								1
down arrow end							1 6.0					
downright arrow		2		2 5.5			2 4.5	1				
end example	2 5.5							1				
first to last	1 3.0							1				2
first to second		7		1 4.0	2			3				
four down end	1 4.0											
happy sad faces										1 2.0		
horizontal		1			2	1 4.0		4				1
horizontals downright arr				1 5.0								
horz diag down arrow	1 3.0											
left arrow		41			18	2 6.0		41				12
left cursor right arrow		1		2 3.5		1 6.0		1				
leftdown arrow		2			2	1 6.0						2
multiple forward triangle										1 7.0		
multiple right arrow		2			1	1 6.0		10				7
no answer	12	232	6		130	9		249	5			89
no change	1 7.0	2						1				1
paragraph symbol							1 7.0	2				
point to end	1 4.0											
right arrow	6 5.3	32	1 4.0		13	3 4.7		40	2 3.5			11
right arrow 1	1 2.0	7			1			2				2
right arrow dot		1	3 5.3									
right arrow screen		2			1	1 4.0						
rightdown arrow	2 4.0											1
spinning wheel							1 7.0					
star	1 3.0	1			3				2			4
stop sign with EOP												
traffic light		1					1 6.0					2
updown arrow		6			2			3	1 3.0			5
wavy horizontal line							1 6.0					
x		2			8	1 1.0		7				
zigzag	2 3.5						1 4.0					

KEY 2 -- →

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mc0
baseball catcher							1	5.0				
box to cursor	1	5.0										
check			2				1	5.0	7			1
cursor			6	1	4.0	1	1	5.0	12			2
cursor arc right	4	4.5	3			2	2	6.0	2			
cursor dots				1	2.0				3			
cursor forward triangle				1	5.0							
cursor greater than				1	6.0							
cursor left arrow			17			9			19	1	4.0	8
cursor plus	1	4.0	2			2			3			
cursor right arrow	12	4.9	9	3	5.7	4	13	5.7	17	5	4.4	
cursor right example	6	5.3	1				3	4.0				
delete example			13			1	1	6.0	18			1
diagonal			2				1	6.0				
don't know	2		43			6	11		230			
first to first	1	6.0	2									
first to second	5	4.4	2	2	3.5				3			
first to third							2	2.5				
forward triangle				1	5.0					2	3.0	2
greater than	1	7.0	1				1	6.0				
knife										1	3.0	
leave blank	1	7.0										
left arrow			41			18	1	4.0	40			12
left cursor right arrow	1	6.0							1			
leftright arrow			4	2	5.5	3	2	5.0	12			
multiple cars							1	3.0				
multiple cursor down arro							1					
multiple cursors	1	5.0	3	1	5.0	1	2	4.5	6			3
multiple right arrow			2			1	5	5.0	5	2	5.5	5
no answer	5		227	3		127	4		245	1		88
paper						13				1	6.0	6
pencil with eraser			2			1			2	1	6.0	3
plus 1	1	6.0	2			1						
right arrow	23	5.9	9	13	5.7		23	5.9	17	5	4.6	6
right arrow 1	5	3.2	2			1	1	4.0	1	1	6.0	1
right arrow cursor second							1	4.0				
traffic light			1							1	6.0	1
upside down							1	6.0				
walking forward										1	5.0	
wavy horizontal 4			1				1	4.0				

KEY 3 -- DELETE

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
backward triangle				3	5.0	2				1	6.0	2
backward triangle with dl										1	6.0	
black box			1	1		2						
black to white box	1	3.0										
bold left arrow	1	5.0	3									
caret			6	1	5.0	2			2			1
-crossed out letter	13	4.7	3			2	13	5.1	2	6	5.0	1
cursor			6	1	2.0		3	4.0	9			2
cursor backward triangle				1	6.0	1						
cursor down arrow			16	1	2.0	7			19			9
cursor in circle	1	6.0	1									
cursor left arrow			17	1	3.0	8	1	2.0	18	1	6.0	7
cursor plus cursor							1	4.0				
cursor right arrow			9			4	1	6.0	16			
cursor white box	1	5.0										
cursor x	4	4.3	1			1	1	4.0	1	1	6.0	
d in circle						1	1	6.0				
delete example	12	4.2	1			1	14	3.9	4	1	6.0	
delete symbol							1	4.0				
diagonal	2	2.0										
don't know	1		42			6	8		222			
dot	1	3.0	2							1	6.0	
highlighted letter							1	3.0				
insert example			12				1	3.0	5			2
left arrow	1	7.0	40	3	5.0	15	3	6.0	37	2	5.5	10
left arrow D	1	5.0										
left arrow letter	1	7.0										
left arrow x				1	3.0							
leftright arrow	1	4.0	3	1	5.0	2	1	3.0	11			
letter left arrow	3	2.7										
letter off the table	1	2.0										
letter right arrow slash							1					
letter slash cursor							1					
letter to trash can	1	6.0										
letters right arrow cursr							1	4.0				
line backward triangle				1	3.0							
line diagonal										1	5.0	
line left arrow			1			1	1	5.0	1	1		
line left arrow line	1	5.0	1									
misty letter										1	4.0	
multiple right arrow			2			1			5	1	5.0	4
no answer	15		212	6		121	17	0.5	228	3		85
pencil with eraser	1	5.0	1			1	2	5.0		1	5.0	2
white box			7	1	4.0	3	2	6.0	2			6
word cursor down arrow							1	4.0				
x	2	5.5		5	5.4	3	2	7.0	5			
x in box	3	4.3	3	1	3.0	1			1			
x in circle	1	3.0					1	5.0				1
x in left arrow	1	7.0										
x left arrow				1	5.0							
x up arrow							1	5.0				

KEY 4 --



Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
arrows down the stairs	1	3.0	1									
cursor down arrow	9	4.7	7	4	5.5	3	14	5.5	5	6	6.2	3
cursor down arrow 1	1	6.0										
cursor down example	4	4.5	2				3	4.7				
cursor downward triangle										1	6.0	
cursor end			1	1	5.0		1	4.0	1			
cursor right arrow			9	1	6.0	3	3	5.0	13			
cursor stack down arrow										1	4.0	
cursor updown triangle										1	6.0	2
cursor v				2	4.0							
curvy x							1	1.0				
don't know			42			6	10		212			
down arrow	26	6.0	27	9	5.9	6	22	6.1	25	1	4.0	5
down arrow 1	1	6.0	3			3	1	4.0	3			
down arrow bet horz	1	4.0	6	2	5.5	3			6			1
down arrow by horz	3	4.0	9	1	5.0	1			1			3
down arrow slash p	1	7.0										
downright arrow	1	2.0	1						1			
elevator										1	3.0	
first to first to first	1	7.0	1									
frog	1	5.0										
horizontals cursors	2	3.0	2									
horizontals down arrow			3			1			10	1	3.0	3
horz down arrow			5	2	5.0	4	1	6.0	6			1
leftright arrow			3			2	1	4.0	10			
light bulb							1	7.0	1			
line							1	1.0				
line spacer										1	7.0	1
multiple updown arrow				1	4.0	1						
no answer	6		206	3		118	8		220	2		83
right arrow	1	6.0	8						17			6
stack down arrow	2	5.5	2	1	2.0		5	4.0	4	2	6.5	1
stack down arrow bet horz	2	5.5	5				2	4.0				1
stack down arrow by horz	2	5.5	3				2	3.0	3	1	5.0	1
stack downuup arrow										1	6.0	
stack first to second	3	4.7	2									
stack forward triangle				1	5.0							
stack right arrow	1	2.0	3			1			1			2
stack three letters										1	6.0	
stacked x							1	5.0				
stairs										1	6.0	1
updown arrow	1	7.0	5	1	6.0	1	1	6.0	2	1	6.0	4
v								1	6.0			
wavy horizontal			1			1	1	4.0	2			3

KEY 5 -- NEXT PAGE

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mc0
4							1	5.0				
additional text	1	4.0	3			1			4			2
arrows out from center							1	6.0	8	1	6.0	2
bold down arrow	1	4.0										
book			1	1	3.0	1			3			1
book left arrow							2	5.5				
book right arrow							1	4.0	1			1
box within box									1	1	5.0	1
bracket down arrow	1	3.0										
c in circle							1	4.0				
cap small letter			17			8	2	4.5	7			8
circle horizontal caret							1	5.0				
circle right arrow ()	1	4.0	1									
circular updown arrow			2				1	4.0	2			2
cursor arc left			5				1	1.0	1			1
cursor down arrow	3	5.0	4			3	1	3.0	4			3
cursor down example	1	6.0	1									
cursor downleft arrow										1	4.0	1
cursor end to begin	1	5.0	21			4	1	3.0	16			8
cursor end to begin rev	1	5.0										
cursor up arrow	1	3.0	14			6			15			8
diagonal up rev				1	2.0							
don't know	5		37			6	17		195			
down 5 lines	1	5.0										
down arrow	2	4.5	25			6	2	5.5	23			5
down arrow 1	1	5.0	2			3			3			
down arrow 4	2	5.0		3	5.3		3	6.0				
down arrow 5	2	4.5					1	7.0	2			
down arrow with screen in	1	7.0										
downleft arrow	1	5.0	7			3			5			3
downleft arrow with s				1	5.0							
first plus second	1	5.0										
first to last									1	1	6.0	1
first to second	1	5.0	1				2	4.0	1			
forward triangle box										1	6.0	
glasses	1	6.0							1			
head on head off men							1	1.0				
horizontal rightup arrow	1	6.0										
horizontals							2	4.0	2	2	6.5	
horizontals cursors	1	2.0	1									
horizontals down arrow	2	4.0	1	1	4.0		1	5.0	9			3
horizontals right arrow										1	5.0	
horizontals v	1	4.0		1	3.0							
horz down arrow			5	2	2.5	2			6			1
horz up arrow			3	1	6.0	4	1	3.0	4			1
ladder	1	1.0										
left arrow			40			15			37	1	4.0	9
leftright arrow	1	7.0	2			2			10			
multiple cursors			3			1	1	4.0	5	1	4.0	2
multiple down arrow				1	4.0	1						
multiple right arrow			2	1	6.0		1	6.0	4	1	5.0	3
multiple up arrow			1	1	6.0							
next page example	7	3.0	3				1	4.0		1	6.0	
no answer	17		189	6		112	17		203	6		77
p up arrow							1	7.0				
right arrow			122	8			1	4.0	16	1	5.0	5
right arrow 1			2	1	3.0				1			1

KEY 5 -- NEXT PAGE

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
right arrow dots			1				1 4.0	3				
screen 1 to 2	3 5.0		1	1 3.0			2 4.5					
small line big line			1	1 3.0								
small to cap letter			26			4	1 7.0	25				2
spiral arrow							1 1.0					
stack down arrow	1 6.0		1				1 7.0	3				1
stack first to first	1 7.0											
stack first to second	1 1.0		1									
stack up arrow			1				1 4.0	4				4
star			1			3	1 4.0	1	1 7.0			3
up and right arrows							1 5.0					
up arrow	1 6.0		38			13	1 7.0	26				1
up arrow bet horz			16	1 3.0		5		6				2
up arrow by horz			10	1 6.0		2						3
up arrow in box	1 3.0								1			
up arrow pg			1			1				1 6.0		
up arrow text							1 5.0					
up cursor down arrow	1 1.0											
updown arrow			5			1			2	1 6.0		3
updown arrow x 4				1 5.0								
updown triangle				1 1.0								
wavy down arrow				1 3.0								
wavy horizontal 4	1 5.0											
white box dots							1 3.0					
white box down arrow				1 7.0		2	1 4.0	2				
white box to white box							1 2.0					
white box up arrow						1	1 5.0	1				1

KEY 6 -- ←

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
backward triangle				2	6.0					1	7.0	1
bold left arrow	1	7.0	2									
circles				1	5.0							
cursor arc							1	3.0	2			1
cursor arc left	5	4.2					1	3.0		1	5.0	
cursor dot cursor							1	5.0				
cursor downleft arrow										1	7.0	
cursor left arrow	15	5.8	2	6	4.7	2	15	5.2	3	5	5.6	2
cursor left arrow letter							1	7.0				
cursor left example	5	5.2	1				4	3.8				
cursor less than				1	4.0							
cursor right arrow			9			3	1	7.0	12			
cursors under letters							1	6.0				
don't know			37			6	6		189			
dot horizontal slash							1	7.0				
first left arrow second	2	4.5	1									
greater cursor less than										1	6.0	
left arrow	33	6.3	7	13	5.7	2	31	5.3	6	6	5.0	3
left arrow 1	1	6.0							1			
left arrow cursor left							1	3.0				
left arrow slash 1	1	7.0										
left cursor right arrow							1	5.0				
leftright arrow			2			2	2	3.0	8			
less than				1	6.0		1	6.0				
letter left arrow letter	2	6.5	1									
multiple backward triangle										1	7.0	
multiple cursor left arrow	2	5.5										
multiple left arrow	1	4.0		1	5.0		1	4.0		1	6.0	
no answer	3		186	4		108	7		196	2	0.5	75
pencil with eraser			1			1				1	7.0	1
right arrow			8				2	3.0	14			5
sad face							1	4.0	1			
traffic light			1							1	5.0	
white box			7			3			2	1	1.0	5

KEY 7 -- PREV PAGE

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mer	mco
5	1	3.0										
a in box							1	6.0				
arrows in to center							1	6.0				
arrows out from center							2	6.0	6	1	5.0	1
black box right arrow										1	7.0	
bold right arrow				1	2.0							
book left arrow leftdown							1	4.0				
book right arrow							1	4.0				1
book right arrow leftdown							1	7.0				
box within box									1	1	5.0	
bracket cursor	1	1.0										
bracket up arrow	1	4.0	1									
cap small letter	1	5.0	16			8			7			8
car with 5 in it										1	6.0	
change				1	1.0		1	2.0				
check			2						7	1	4.0	
circular updown arrow	1	1.0	1				1	6.0	1			2
cursor begin to end	1	5.0				3			1			
cursor down example	1	6.0										
cursor leftup arrow	1	6.0										
cursor right arrow	1	4.0	8			3	1	5.0	11			
cursor up arrow			14	1	3.0	5			15	1	6.0	7
don't know	7		30	1		5	28		161			
dots			1	1	2.0	2			2			1
down arrow 5							1	7.0	1			
down arrow by horz	1	6.0	8			1			1			3
down arrow in box	1	3.0	1									
down arrow pg										1	6.0	
downleft arrow 4				1	3.0							
end to begin screen							1	5.0	1			
first to first	1	6.0	1									
forward triangle horizon										1	6.0	1
horizontal less than	1	2.0										
horizontals							1	4.0	1			
horizontals down arrow			1				3	3.3	6			3
horizontals down arrow 4	1	3.0										
horizontals up arrow			1	1	2.0	1			3			1
horizontals updown arrow							1	5.0				
left arrow	3	4.0	4			2			6	1	6.0	2
left arrow 4			2				1	5.0				
left arrow paragraph sym			1			1				1	7.0	
leftright arrow			2			2	2	5.0	6			
leftup arrow			8	1	5.0	3			1			
letters cursors letters							1	6.0				
line left arrow	1	3.0				1			1			
line left arrow slash s	1	7.0										
line right arrow line	1	3.0							1			
man falling over							1	3.0				
mirror			4						1	1	1.0	1
multiple cursors	1	3.0	2			1			5			2
multiple less than				1	2.0							
next page example	3	3.0										
no answer	11		175	9		99	16		180	2		73
outline	1	2.0										
p down arrow	1	2.0										
plus			5	1	2.0	2			6			2
prev page example	2	3.5	125						1			

KEY 7 -- PREV PAGE

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqa	mcf	mcr	mco
question mark			12			5	1 4.0	13				3
right arrow			8					14	2 3.0			3
right arrow between horz				1 1.0								
right arrow screen	1 2.0		1	1 4.0								
rightleft arrow							1 2.0	1				
rightup arrow	1 4.0					1		1				
screen 1 to 2	1 5.0											
screen 1 to 3	1 3.0											
screen 2 to 1	1 4.0						1 4.0					
screen 3 to 1				1 2.0								
screen to screen	2 2.5	2				3		2	1 6.0			2
second left arrow first	1 3.0						1					
second to first							1 5.0					
small to cap letter			26			4	1 7.0	24				2
stack down arrow			1					3	1 6.0			
stack first to second	1 2.0											
stack up arrow	1 6.0							4				4
star			1			3		1	1 4.0			2
synonym example	1 2.0											
tree sidewalk house							1 1.0					
uninterpretable			1			1	2	10	1			4
up arrow	2 3.5	36				13	2 7.0	24				1
up arrow 1	1 6.0	3				2						1
up arrow 4	1 6.0			3 3.7		1						
up arrow 5	1 1.0											
up arrow by horz	1 5.0	9				2						3
up arrow in screen				1 2.0								
up arrow pg	1 7.0			1 5.0								
up arrow with screen in	1 7.0											
up five lines	1 5.0											
updown arrow	1 3.0	4				1		2				3
upleft arrow			2	1 3.0		1		1				
upright arrow tp	1 1.0											
wavy lines in box										1 3.0		
white box	1 1.0	6				3		2				5
white box down arrow						2	1 6.0	1				
white box left arrow	1 4.0	1										
white box right arrow						1				1 5.0		
white box up arrow				1 6.0			1 6.0			1 4.0		
x						3	1 3.0	4				

KEY 8 -- SCROLL UP

Label	sqf	sqr	sqa	scf	scr	sco	mqr	mqr	mqa	mcf	mer	mco
1st	1	2.0										
1x 2v	1	1.0										
arc right arrow			3	1	5.0	5						
arrows out from center							2	4.5	4	1	4.0	
begin paragraph							1	3.0				
book			1			1	1	2.0	2			1
caret			6			2	1	6.0	1			1
change letter										1	2.0	
circular updown arrow			1						1	1	3.0	1
crossed out line	1	2.0	4			2	1	6.0	6			5
cursor begin			4	1	4.0				3			
cursor down arrow	1	2.0	3			3	2	3.5	2	1	7.0	2
cursor right arrow			8			3	1	4.0	10			
cursor up arrow	1	6.0	13			5			15			7
don't know	2		28	1		4	19		142			
down arrow	10	4.9	15	1	6.0	5	5	5.8	18	1	6.0	4
down arrow "line"	2	5.0							1			
down arrow 1	1	6.0	1	3	5.0		2	6.0	1			
down arrow 2	1	2.0										
down arrow bet horz	2	4.0	4	1	4.0	2			6			1
down arrow by horz	2	4.0	6	1	3.0				1	3	5.0	
down arrow ct							1	5.0				
down arrow in box	1	2.0										
down arrow sc				1	5.0							
down arrow with line in	1	7.0										
downleft arrow 1				1	6.0							
downright arrow			1				1	6.0				
downward triangle w down a				1	4.0							
first and last										1	6.0	
first or second				1	1.0							
first to first	1	6.0										
first to last							1	1.0				1
forward triangle horizon										1	6.0	
horizontal check							1	4.0				
horizontal multiple down							1	7.0				
horizontal multiple up							1	5.0	1			
horizontal v	2	4.0										
horizontals cursors	1	5.0										
horizontals down arrow			1				1	6.0	5	1	6.0	2
horizontals up arrow	1	5.0				1	1	4.0	2			1
horizontals with by in	1	5.0										
horz down arrow	2	3.5	3			2	1	4.0	5	1	6.0	
horz up arrow	2	3.0	1	2	3.5	2	1	5.0	3			1
left arrow			4	1		1			6			2
leftright arrow			2			2	1	2.0	5			
line delete example	1	2.0	8			2			3			1
line spacer										1	5.0	
magnifying glass							1	5.0				
next screen	4	3.0										1
no answer	10		165	6		93	15		165	3		70
right arrow 5				1	5.0							
right arrow dots			1				1	5.0	2			
right arrow sent										1	6.0	
scissors							1	6.0	1	1	6.0	
screen to screen			2	1	2.0	2	2	5.5				2
scroll next example	7	3.3		1	1.0		2	2.0				
small to cap letter			12726			4	1	7.0	23			2

KEY 8 -- SCROLL UP

Label	sqf	sqr	sqr	scf	scr	sco	mqf	mqr	mqr	mcf	mcr	mco
stack down arrow			1				2 5.0	1				
stack down arrow bet horz	2 3.0	3										1
stack down arrow by horz	1 6.0	2					1 2.0	2				1
stack first up arrow sec	1 5.0	1										
stack rightup arrow s	1 5.0											
stack screen to screen				1		1						
stack second updown first							1 5.0					
stack up arrow							2 0.5	2				4
stack up arrow bet horz	2 4.0	1						5				
traffic light down arrow							1 5.0					
uninterpretable			1			1	1	9	1			3
up arrow	1 1.0	35				13		24				1
up arrow "line"							1 6.0	2		1 6.0		
up arrow 1			3			2				1 6.0		
up arrow bet horz	2 5.0	14				5		6				2
up arrow by horz	1 2.0	8				2						3
updown arrow		4		1 6.0				2				3
upward triangle with s							1 3.0					
wavy horizontal			1			1		2		1 6.0		2
white box down arrow				1 7.0		1		1				
white box right arrow				1 2.0								
white box up arrow 1							1 6.0					

KEY 9 -- INSERT

Label	sqf	sqr	sqa	scf	scr	sca	mqf	mqr	mqo	mcf	mcr	mco
backward triangle with x				1	1.0							
black diamond										1	6.0	
boat on the water							1	2.0				
caret	5	4.8	1	2	6.0					1	1	6.0
caret cursor	1	4.0	1			1						
check	1	4.0	1				1	5.0	6			
circle in circle				1	2.0	1						
circle right arrow ()	1	6.0										
close space							1	6.0				
crossed out letter	1	4.0	2			2	1	4.0	1			1
cursor	3	4.0	3				1	6.0	8			2
cursor arc dots							1	5.0				
cursor arc right			3	1	3.0	1	1	5.0	1			
cursor down arrow			3	1	1.0	2			2	1	7.0	1
cursor left arrow			2			2			3	1	5.0	1
cursor plus	2	4.0		1	5.0	1			3			
cursor right arrow			8	3	5.3		1	5.0	9			
cursor x			1			1	1	3.0				
delete example	1	6.0				1	2	5.0	2			
diagonal down arrow				1	6.0							
don't know	3		25			4	15		127			
dot right parenthesis							1	5.0				
down arrow h	1	4.0										
e	1	4.0					1	7.0				
e left arrow	1	3.0										
e right arrow							1	3.0				
eyeball							1	6.0				
half and half circle							1	3.0				
horizontal	1	3.0		1	2.0	1			4	1	6.0	
horizontal right arrow				1	6.0	1			1			
insert	11	3.5	1	2	5.0		9	3.8	1	4	4.0	1
insert example	7	4.0	5				5	4.4		2	7.0	
l in circle	1	7.0										
left arrow	1	1.0	3			1	1	4.0	5			2
left arrow delete							1	4.0				
left arrow line plus							1	4.0				
leftright arrow			2			2	2	6.0	3			
leftright arrow corr							1	3.0				
letter between horizontal	1	6.0										
letter cursor left arrow	1	2.0										
letter cursor letter							1	1.0				
letter rightleft arrow	1	6.0										
line right arrow cursor										1	1.0	
multiple cursors question							1	1.0				
multiple cursors right ar	1	2.0	6						4			
no answer	14		151	9		84	15		150	6		64
pencil with eraser	1	4.0				1						1
plus	2	5.0	3	1	5.0	1	5	5.2	1	2	4.0	
plus 1	1	4.0	1	1	3.0							
plus a	1	2.0	1									
plus e							1	5.0				
plus letter	1	6.0					1	4.0				
question cursor down arr				1	6.0							
reverse order example			1				1	2.0				
right arrow			8				1	7.0	13			3
right arrow plus	1	7.0										
right arrow word			129				1	4.0				

KEY 9 -- INSERT

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
s slash right arrow							1	5.0				
sliding board										1	7.0	
star			1	1	3.0	2			1			2
undo example	1	3.0	36			6			17			1
uninterpretable	1	2.0				1			9			3
white box cursor right ar				1	4.0							
white box to letter	1	2.0										
x						3	1	4.0	3			
x in circle										1	2.0	

KEY 10 -- SCROLL DOWN

Label	sqf	sqr	sqr	scf	scr	sco	mqf	mqr	mqr	mcf	mcr	mco
additional text	1	4.0	2			1			4			2
arc left arrow				1	5.0	2						
arrows out from center							1	6.0	3			
atom										1	7.0	
bold left arrow	1	6.0	1									
box within box							1	1.0				
bracket up arrow	1	3.0										
caret cursor	1	5.0				1						
circular updown arrow			1						1	1	5.0	
cursor delete cursor	1	3.0										
cursor down arrow	1	2.0	2			2			2			1
cursor leftdown arrow	1	1.0										
cursor right arrow			8				1	6.0	8			
cursor up arrow	2	4.0	11	1	4.0	4			15	2	5.5	5
cursor updown triangle										1	5.0	1
cursor upward triangle				1	2.0							
cursor x			1	1	3.0							
dollar sign										1	1.0	
don't know	3		22	1		3	28		99			
down 1 up 2							1	5.0				
down 2 up 1				1	4.0							
down arrow	2	4.5	13			5	2	3.5	16	1	6.0	3
down arrow "line"							1	4.0				
down arrow "roll"							1	6.0				
down arrow 5							1	7.0				
down arrow bet horz	1	6.0	3			2			6			1
down arrow by horz	1	2.0	5						1			
down arrow return							1	4.0				
down arrow screen							1	1.0				
down arrow sent										1	6.0	
exclamation mark	1	3.0	1						1			1
first and fifth										1	4.0	
first left arrow second	1	4.0										
first to question mark	1	6.0										
hook							1	1.0				
horizontal						1	1	4.0	3			
horizontal caret							1	6.0				
horizontal diagonal up re	1	3.0										
horizontal multiple caret				1	3.0							
horizontal multiple up							1	7.0				
horizontal down arrow	1	2.0					3	4.7	2			2
horizontal plus	1	6.0										
horz down arrow	1	4.0	2			2	1	6.0	4			
horz up arrow	1	3.0		1	6.0	1			3	1	6.0	
left and up arrow				1	2.0							
left arrow	1	6.0	2			1			5	1	6.0	1
left arrow 1							1	5.0				
left arrow 4	1	4.0	1									
left arrow rb (read back)							1	4.0				
leftright arrow			2	1	3.0	1			3			
leftright arrow r							1	4.0				
leftup arrow	1	1.0	7	1	1.0	2			1			
multiple right arrow			2				1	2.0	3	1	6.0	2
no answer	11		140	8		76	12		138	6		58
plus	1	1.0	2			1			1			
question mark			12			5	1	1.0	12			3
right arrow 4	1	2.0	131									

KEY 10 -- SCROLL DOWN

Label	sqf	sqr	sqr	scf	scr	sco	mqf	mqr	mqr	mcf	mcr	mco
rightup arrow							1	1	6.0			
s in circle	1	1.0										
screen to screen			2			2				1	4.0	1
scroll prev example	6	3.7					1	4.0				
stack down arrow bet horz	1	5.0	2									1
stack left arrow			1				1	7.0	1			
stack right arrow	1	5.0	2			1			1			2
stack screen to screen				1	1.0							
stack up arrow by horz	1	5.0	2							1	6.0	
traffic light up arrow							1	6.0				
u reverse u							1	4.0				
undo example			36			6	1	4.0	16			1
uninterpretable						1	3		6			3
up arrow	7	6.3	28	4	4.8	9	1	5.0	23			1
up arrow "line"							2	5.5				
up arrow 1	1	6.0	2	2	4.5							
up arrow bet horz	6	4.2	8	2	4.5	3			6	1	6.0	1
up arrow by horz	4	4.5	4			2						3
up arrow in box							1	7.0				
up arrow 1	1	7.0										
up arrow with line in	1	7.0										
updown arrow para							1	4.0				
updown triangle horizon										1	6.0	
white box down arrow				1	7.0		1	6.0				
xo							1	3.0				

KEY 11 -- CAPS LOCK

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
L							1	4.0				
T	1	3.0					1	4.0				
additional text	1	5.0	1			1			4			2
all caps	12	5.1	5			2	8	5.2	7			
arc down arrow arc							1	6.0				
black circle	1	6.0										
book right arrow										1	6.0	
c							1	1.0	4			
cap small letter	2	4.5	14	1	5.0	7	2	6.0	5	4	4.2	4
check			1				1	2.0	5			
cursor comma							1					
cursor dots							1	3.0	2			
cursor down arrow			2	1	2.0	1			2			1
cursor first							1	6.0				
cursor plus						1	2	2.5	1			
cursor right arrow	2	4.0	6						8			
don't know	4		18	1		2	12		87			
dots	1	4.0				2	2	6.5				1
down arrow			13			5	1		15	1	6.0	2
down arrow bet horz			3			2			6	1	7.0	
downleft arrow			7			3			5	1	6.0	2
exclamation mark	1	3.0					1	5.0		1	5.0	
first	1	3.0	2	2	2.0		3	4.0	1	1	2.0	
first and second							1					
first dots	1	3.0					1	4.0				
first plus first	1	7.0										
first to first dots	1	3.0										
happy face			1				1	5.0	1			
hat			1				1	4.0	1			
horizontal				1	4.0				3			
insert	1	6.0							1			1
lines slash							1	5.0				
multiple right arrow			2				1	2.0	2			2
multiple star				1	1.0							
multiple x dots	1	3.0										
next screen										1	3.0	
no answer	14		126	11		65	11		127	9		49
parentheses				1	6.0							
plus	1	6.0	1	1	2.0		1	5.0				
plus b	1	3.0										
plus info							1	5.0				
plus p	1	2.0					1	2.0				
quote							1	6.0				
quote marks	1	5.0					1					
right arrow	1	4.0	7						13			3
right arrow plus												
small to cap letter	16	4.5	10	4	3.5		15	5.8	8			2
small to cap letters	3	5.0		1	5.0		1	4.0				
small to cap word	1	6.0										
stack caret				1	5.0							
stack right arrow			2			1	1	6.0				2
stack upward triangle				1	4.0							
telephone						1	1	7.0				
uninterpretable				1					6	1		2
upward triangle in triang										1		
white box			133	6	1	5.0	2		2			5

KEY 12 --



Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mer	mco
1						1	1		1			
arrows out from center							2	1.0	1			
arrows up the stairs	1	6.0										
backward triangle										1	6.0	
bold up arrow	1	7.0	1									
c							1	2.0	3			
caret			1				1	6.0				
caret cursor				1	6.0							
colors							1	6.0				
cursor backward triangle				1	1.0							
cursor end to begin			21	1	6.0	3			16			8
cursor left arrow			2			2	1	6.0	2			1
cursor up arrow	9	5.6	2	4	5.0		15	4.9		5	5.6	
cursor up arrow 1							1	6.0				
cursor up example	2	5.0					2	4.0				
cursor updown triangle										1	6.0	
don't know			18			2	4		83			
down arrow			13			5	1	6.0	14			2
down arrow by horz	1	5.0	4						1			
downup arrow										1	4.0	
glasses							1	1.0				
horizontals up arrow				1			1	4.0	1	1	5.0	
horz down arrow			2			2	1	6.0	3			
horz up arrow						1	3	5.7				
leaf							1					
left arrow	1	4.0	1			1			5	1	5.0	
left arrow 4	1	4.0										
leftup arrow	1	3.0	6			2			1			
main word example	1	3.0										
multiple updown arrow				1	3.0							
no answer	3		123	3		62	5		122	1		48
paragraph symbol							1	4.0	1			
stack black white triangle				1	5.0							
stack cursors				2	3.0	1			4			
stack down arrow by horz			2				1	3.0	1			1
stack first up arrow firs	1	7.0										
stack first up arrow sec	1	6.0										
stack up arrow							2	5.5		4	6.0	
stack up arrow bet horz	1	4.0					5	4.0				
stack up arrow by horz	2	5.0										
triangle up slope										1	5.0	
unintepretable							1					
uninterpretable							1		5	1		1
up arrow	27	5.6	1	9	5.8		20	6.0	3			1
up arrow 1	2	4.5										
up arrow bet horz	8	4.7		3	6.0		6	4.2		1	6.0	
up arrow by horz	4	3.7		2	5.0					3	5.3	
up arrow paragraph symbol	2	6.5										
updown arrow			4						2	1	7.0	2
upright arrow	1	4.0	1									
wavy horizontal			1			1	1	3.0	1			2

KEY 13 -- RETURN

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
arc left arrow				1 4.0		1						
arc right arrow	1 7.0	2				5						
arrows down the stairs	1 4.0											
arrows out from center							1 1.0					
circle		2				1	1 1.0		1			
crossed out horizontal							1 2.0		1			
cursor	1 1.0	2							8	2 6.0		
cursor back 2 example							1 1.0					
cursor begin to end rev	1 3.0									1 6.0		
cursor down arrow	2 5.5			1 4.0			2 4.5			1 4.0		
cursor left example	1 3.0											
cursor right arrow		6					1 6.0		7			
cursor rightdown arrow							1					
don't know		18				2	9		74			
down 2 lines										1 6.0		
down arrow	12 5.1	1		5 5.6			13 5.6		1	2 6.0		
down arrow 1	1 4.0						1 5.0					
down arrow bet horz	3 5.3			2 6.5			5 3.2		1			
down arrow by horz	4 4.7						1 5.0					
down arrow ret							1 5.0					
down arrow s	1 3.0											
downleft arrow	6 5.3	1		3 5.0			5 3.6			2 7.0		
downleft arrow r				1 7.0								
downright arrow	1 2.0											
forward triangle										1 6.0		1
horizontal right arrow						1	1 3.0					
horizontals 2				1 4.0								
horizontals cursor		1								1 7.0		
horizontals down arrow							2 4.0			2 5.5		
horz down arrow	2 6.0			2 6.0			3 4.7					
left and down arrow							2 3.5					
left arrow	1 6.0					1	1 6.0		4			
leftdown arrow	2 3.5			2 3.5						2 5.0		
leftdown arrow r	1 6.0											
leftright arrow		2				1	1 6.0		2			
line change	1 4.0											
line left arrow				1 6.0			1 6.0					
line left arrow line	1 7.0											
multiple down arrow				1 3.0								
no answer	12	111		6		56	13		109	3		45
question mark		12				5	1 5.0		11			3
r	1 5.0	1										
right arrow	3 5.3	4					2 3.0		11			3
rightdown arrow										1		
skip line		1					2 3.0		1			
stack cursors				1 2.0			4 4.0					
stack down arrow	1 7.0						1 7.0					
stack down arrow bet horz	2 4.5									1 7.0		
stack down arrow by horz	2 5.0						1			1 6.0		
stack left arrow	1 5.0						1 6.0					
stack right arrow	2 4.0			1 4.0						1 5.0		1
star in box				1 2.0								
uninterpretable							1		4			1
wavy horizontal	1 5.0					1			1			2
white box	2 4.5	4				2			2			5

KEY 14 -- HOME

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
1					1 4.0						1	
arc left arrow					1 2.0							
b								1 3.0				
brackets left arrow								1 4.0				
check			1					1 4.0		4		
circle			2			1		1 4.0				
circular updown arrow	1 3.0									1		
crossed out cursor			1					1 4.0		6		
crossed out horizontal								1				
cursor begin	4 3.8							3 5.0				
cursor begin and end	1 6.0										1 7.0	
cursor begin to end				3 4.0				1 3.0				
cursor end to begin	21 4.4			3 4.0			16 3.8			8 4.7		
cursor left arrow	2 5.0			2 4.5			2 6.0			1 6.0		
cursor line							1 4.0					
cursor up arrow	2 6.0											
cursor upright arrow							1 1.0					
diagonal arrow	1 4.0			2 4.5			1 6.0					
diagonal up arrow	4 5.0			1 3.0			1 6.0			1 3.0		
don't know	3	15	1		1	13			61			
down arrow	1 3.0								1			
downup triangle											1 6.0	
end example							1 2.0					
end to begin	2 5.0											
end to begin screen							1 5.0					
f							1 2.0					
home example	3 6.0											
horizontals up arrow							1 2.0					
horz diag up arrow	2 4.5			1 4.0			2 4.0					
horz up arrow				1 3.0								
house				1 6.0			1 5.0		1			
insert							1 3.0					1
left arrow				1 4.0			1 3.0		3			
left arrow horse							1 7.0					
left arrow paragraph sym	1 7.0			1 6.0								
left arrow screen							1 6.0					
leftup arrow	6 5.0			2 5.0			1 4.0					
letter left arrow letter	1 7.0											
multiple up arrow	1 4.0											
n							1 3.0					
no answer	9	102	4		52	10		99	4		41	
paragraph symbol							1 7.0					
prev page example							1 2.0					
question mark			12			5	1 6.0	10				3
right arrow			4				1 3.0	10		1 7.0		2
right arrow 1			2				1 6.0					1
screen to screen			2			2				1 2.0		
stack multiple left arrow	1 3.0											
telephone				1 5.0								
uninterpretable							1		3	1		
up arrow	1 4.0						3 4.7			1 5.0		
up arrow 4				1 6.0								
updown arrow			4						2	1 6.0		1
upleft arrow	2 1.5			1 5.0			1 5.0					
upright arrow	1 3.0											
upward triangle			1	1 4.0						1		
wavy horizontal		136				1	1 5.0					2

KEY 14 -- HOME

Label

sqf sqr sqo scf scr sco mqf mqr mqo mcf mcr mco

word horizontal

1 4.0

KEY 15 -- TAB

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
2 white boxes							1 4.0					
5 lines				1 5.0								
6	1 3.0											
arc right arrow	1 4.0		1	5 3.2								
book			1			1	1 3.0	1				1
check	1 5.0						3 4.0	1				
cursor			2				1 4.0	6				
cursor 5										1 5.0		
cursor arc							1 1.0	1		1 6.0		
cursor arc right			3	1 5.0			1					
cursor downright arrow										1 7.0		
cursor right arrow	4 4.2		2				5 5.6	2				
cursor right arrow 6	5 5.8						4 4.0			3 4.7		
cursors out from center				1 6.0								
don't know	2		13	1			12		49			
dont know			13			3	7		57			2
dots				2 2.5								1
downward triangle with 5				1 5.0								
first to first to first	1 7.0											
horizontals							1 6.0					
horizontals greater than				1 2.0								
insert										1 6.0		
jumping man							1 1.0					
line right arrow										1		
line right arrow line							1 6.0					
mirror			4						1	1 2.0		
multiple cursor							1 1.0					
multiple cursor arc right				2 3.5			2 3.5					
multiple cursors	1 5.0		1	1 5.0			2 5.0	3		2 3.5		
multiple cursors arc										1 7.0		
multiple cursors right ar	6 5.0						4 4.2					
multiple right arrow	1 4.0		1				2 3.5			1 6.0		1
no answer	12		90	7		45	12		87	2		39
no change			2						1	1 7.0		
question mark			12			5	1		8	1 7.0		2
right arrow line	1 2.0											
right arrow	4 5.5						9 5.4	1		1 4.0		1
right arrow 6	18 4.3			5 5.2			5 5.4			2 5.5		
right arrow 7							1 6.0					
right arrow line	1 2.0											
right arrow t	1 3.0											1
rightup arrow				1 4.0								
stack right arrow										1 5.0		
tab example	8 4.5						2 4.0					
traffic light	1 5.0											
updown arrow	1 6.0		3						2			1
wavy right arrow										1 5.0		

KEY 16 -- SHIFT

Label	sqf	sqr	sqa	scf	scr	sco	mqr	mqr	mqa	mcf	mcr	mco
1							1	6.0				
1 cursor right arrow				1	5.0							
additional text	1	7.0				1	3	2.7	1			1
all caps	4	4.0	1	2	2.5		6	6.2	1			
black box			1	2	1.5							
bold 1				1	4.0							
bold up arrow	1	2.0										
c							3	5.7				
cap small letter	14	4.3		7	2.9		5	6.2		3	6.0	1
caret	1	4.0										
case change	2	5.0					3	5.0				
circle	1	2.0	1			1						
circular updown arrow							1	3.0				
crossed out letter			1			2	1	3.0				
crossed out screen			3				1	6.0	3			3
cursor			2				1	2.0	5			
cursor arc right	1	5.0	2									
cursor dots							1	1.0	1			
cursor i							1	6.0				
cursor right arrow			2				1	6.0	1			
cursor right example	1	3.0										
don't know			6				8		18			
dont know	1		12	1		2	8		49			2
dots										1	5.0	
first	2	4.0					1	5.0				
first to last										1	6.0	
first to second			1				1					
hat	1	1.0					1	1.0				
horizontal							2	2.0	1			
horizontal right arrow				1	4.0							
horizontals p										1	7.0	
insert example	5	5.0										
l							2	3.0	1			
left arrow							1	4.0				
leftright arrow			1			1	1	5.0				
light bulb							1	5.0				
multiple cursors	1	3.0					1	3.0	1			
multiple cursors question				1	5.0				1			
multiple right arrow	1	3.0								1	6.0	
no answer	16		61	10		29	7		70	8		24
octopus							1	4.0				
pencil			1				1	2.0				
plus a	1	1.0										
plus i							1	3.0				
plus l							1	3.0				
question mark			12			5	1	5.0	7			2
rev u				1	5.0							
right arrow							1	6.0		1	4.0	
right arrow "sp"	1	6.0										
right arrow 1	2	2.0								1	6.0	
right arrow dots	1	5.0										
right arrow t										1	5.0	
right arrow wavy horizon							1	2.0				
rightleft arrow							1	4.0				
small line big line	1	3.0										
small to cap letter	10	4.9					8	5.6		2	5.5	
stairs										1	3.0	

KEY 16 -- SHIFT

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqi	mqo	mcf	mcq	mco
star			1	1	5.0	1	1	2.0				1
traffic light plus							1	6.0				
triangle within triangle										1		
white box	1	3.0	3	1	5.0				2			5

KEY 17 -- UNDO

Label	sqf	sqr	sqs	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
2				1	4.0							
additional text			1			1			4	1	7.0	1
bold horizontal										1	5.0	
check							1	6.0	1			
crossed out 1				1	6.0							
crossed out letter	1	7.0	1			2			1	1	6.0	
crossed out line	4	4.0		2	4.5		6	4.2		5	5.4	
crossed out word							1	4.0				
cursor			2				1	4.0	7			
cursor arc							1	6.0				1
cursor horizontal				1	5.0							
cursor plus				1	6.0		1	5.0				
cursor slash first							1	3.0				
cursor slash r	1	2.0										
cursor x	1	3.0										
d	1	2.0	1						1			
delete example				1	2.0		1	4.0	1			
don't know	7		6			1	23		33			
down arrow							1	5.0				
down arrow bet horz							1	4.0				
downleft arrow	1	4.0										
forward triangle										1	6.0	
hand							1	6.0				
horizontal in box							1	2.0				
horizontal plus							1	4.0				
horizontal slash right ar							1	5.0				
horizontal up arrow resto	1	5.0										
horizontal "stop"	1	3.0										
horizontal cursor	1	4.0										
horizontal happy face							1	5.0				
horizontal in diamond				1	4.0							
horizontal left arrow				1	2.0							
left arrow							2	6.0	1			
leftright arrow	1	2.0	1			1	1	6.0	1			
less than dots				1	4.0							
line delete example	8	4.0		2	3.5		3	4.0		1	6.0	
line rightleft arrow							1	3.0				
m			1				1	7.0	1			
multiple cursors			1			1	1		2			2
multiple cursors left arr	1	2.0							1			
no answer	13		77	6		46	10		84	7		34
pencil with eraser				1	6.0					1	5.0	
plus 1	1	2.0										
question mark			12			5	1		9			3
reverse order example	1	5.0										
right arrow dots			1				2	3.5				
scissors							1	5.0				
skip line	1	4.0					1	6.0				
slash				1	3.0							
slash x				1	5.0							
star			1			2			1	1	2.0	1
trash can to screen	1	4.0	1									
two white boxes										1	2.0	
undo example	18	4.0	18	4	3.0	2	9	3.8	7	1	2.0	
uninterpretable							1		2			
up arrow "erase"							1	5.0				
updown arrow	3	5.0	141				2	6.0		1	6.0	

KEY 17 -- UNDO

Label	sqf	sqr	sqa	scf	scr	sca	mqf	mqr	mqa	mcf	mcr	mca
wavy horizontal					1	2.0						2
wavy horizontal left arro	1	1.0										
wavy right arrow	1	2.0										1
white box			4	1	5.0	1			2			5
x				1	5.0	2			3			
x in box	1	5.0	2			1			1			
x slash plus				1	5.0	1						

KEY 18 -- ON/OFF

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
black and white circle											1 6.0	
black box	1 6.0											
black screen				2 6.0							1 7.0	
black to white screen	5 3.4			2 5.5			1 5.0				1 6.0	
blank											2 3.5	
brackets	1 3.0											
circle	1 6.0			1 3.0								
circle square	1 2.0											
crossed out letter	1 7.0			2 5.5								
crossed out letter screen											1 6.0	
crossed out screen	3 4.3						3 2.7				3 4.3	
cursor							1 4.0					
d			1				1 7.0					
d in circle				1								
date											2 6.5	
delete example							1					
dont know	5		3				20		2			
dot in circle				1 3.0								
dot in circle black box				1 2.0								
eyes	1 5.0											
half and half screen	1 6.0			1 3.0								
half and half square	1 4.0											
house							1 3.0					
key											1 7.0	
leftright arrow				1 3.0								
letter cursor							1 2.0					
m			1				1 7.0					
multiple cursors							1 4.0					
multiple slashes	1 1.0											
no answer	20 0.4	25	10				27		23	7		
no change							1 2.0					
plus slash	1 2.0											
pr							1 5.0					
question mark			12				1 1.0		2			
right arrow multiple cur							1 6.0					
right arrow screen	1 5.0											
screen to screen	1 7.0	1										
slash cursor	1 5.0											
slashes in circle	1 1.0											
spiral	1 2.0											
trash can to screen	1 6.0											
undo example	17 3.7	1	2 6.0				7 3.3					
uninterpretable							1		1			
updown v to screen							1 3.0					
white box	2 3.5						1 6.0	1	2 3.0			
white box horizontal							1 4.0					
white screen				2 4.0			2 5.5			1 6.0		
white to black screen	1 6.0						2 3.0					
x				2 6.0			2 5.5					
x in box	1 2.0	1					1 4.0					
x slash plus				1 3.0								

KEY 19 -- HELP

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcq	mco
1 in box					1 4.0							
additional text					1 4.0		1 6.0			1 5.0		
bold left arrow	1 1.0											
book	1 2.0			1 1.0			1 3.0			1 4.0		
change screen	1 6.0									1 1.0		
circle in circle				1 2.0								
d	1 4.0											
don't know	5						18					
don't know	3		5	1			9		20	1		
dot horizontal line				1 2.0								
downleft arrow "m"				1 6.0								
drowning man	1 6.0			2 3.5								
f1							1					
first to second	1 7.0											
food							1 1.0					
h	1 4.0						1 6.0					
h in circle							1 5.0					
happy face	1 5.0						1 1.0					
help menu										1 7.0		
left arrow scr	1 3.0											
m	1 3.0											
man							1 7.0					
menu				1 6.0			1 2.0					
mirror	3 4.0						1 6.0					
multiple question marks	3 5.3			2 6.0			1 6.0					
no answer	25		20	9		10	31		27	12		7
plus	1 2.0											
prescription sign	1 6.0											
question exclamation mark	1 1.0											
question mark	12 5.1			5 5.8			5 3.8		1	2 6.0		
question mark right arrow	1 4.0											
right arrow cursors							1 5.0					
sad face							1 3.0					
screen				1 7.0								
screen to screen	1 5.0		1	2 3.0								
sos							1 7.0					
star										1 7.0		
sun							1 4.0					
undo example	1 3.0											
uninterpretable							1					
up arrow to circle	1 3.0											
upward triangle	1 5.0											
white box			2				1 1.0		1	1 6.0		2
white box horizontals										1 4.0		
x in box	1 1.0											

KEY 20 -- PRINT

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
3							1	7.0				
all caps	1	2.0					1	4.0				
arc right arrow	1	3.0										
box in box				1	6.0					1	4.0	
cap small letter										1	5.0	
circle cursor	1	4.0										
-colon											1	6.0
colon in box											1	6.0
colon in circle							1	6.0				
colon slash semi colon				1	2.0							
crossed out cursor	1	6.0					6	4.7				
cursor	2	6.0					4	3.0				
cursor arc right	2	4.5										
cursor dots							1	1.0				
cursor end	1	1.0					1	4.0				
cursor in circle	1	2.0										
cursor right arrow	2	5.5					1	3.0				
cursor right arrow questi	1	2.0										
delete cursor example	5	3.2					4	4.0				
delete screen example											1	2.0
don't know	1											
dont know	4			1			20				1	
dot	2	4.0										
e in circle							1	5.0				
fish							1	1.0				
greater than	1	4.0										
horizontal							1	7.0				
horizontals in box							1	4.0				
insert cursor example	1	5.0					1	5.0				
l							1					
left arrow "return"							1	4.0				
leftright arrow	1	2.0										
lines							1	2.0				
man with to without hat							1	2.0				
mirror	1	4.0										
mirror example							1	4.0				
multiple cursors left arr							1	6.0				
no answer	16			10			12				5	
no change	2	6.5										
p	4	5.3					4	3.8			1	5.0
paper				13	4.3						6	5.5
pencil	1	6.0										
plus 0							1	3.0				
pr	2	4.0										
printed letters	1	5.0										
printer	7	5.0					4	5.0				
question mark							1					
r	1	6.0										
right arrow 2	1	5.0										
right arrow dot	1	4.0										
star	1	4.0		1	1.0							
stop							1	7.0				
stop sign							1	4.0				
v in to center				1	6.0							
wavy horizontal											2	5.0
wavy horizontal down arro							1	4.0				
wavy horizontal right arr							1	4.0				

KEY 20 -- PRINT

Label	sqf	sqr	sqa	scf	scr	sco	mqf	mqr	mqo	mcf	mcr	mco
wavy horizontals	2	4.0					2	5.5				
white box	1	5.0									2	6.0
white box left arrow	1	5.0										
x							1	4.0				
x in box				1	1.0							

Appendix D

Response Sheets

Used in Part 2

ON DESIGNING
COMPUTER KEYBOARDS

Elizabeth Zoltan-Ford,
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Please follow the instructions on the computer screen before you.

EXAMPLE RESPONSE SHEET:

Suppose that you felt the phrase PRINT BKWDS (for "print backwards") was the best verbal label for what happened to the information in the example BEFORE and AFTER screens. Then, you would fill in the question below like this:


Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes this key.

P R I N T
B K W D S

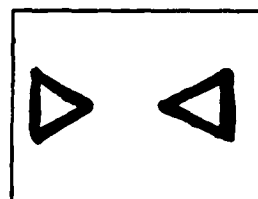
And if you thought that your suggestion of PRINT BKWDS was an extremely good one, you would complete the rating scale below like this:

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable ✓

For the same key, you would then need to suggest a symbolic label that describes what happened to the information on the BEFORE and AFTER screens. One possibility would be . So you would respond to the question below like this:

In the box to the right, draw a symbol or picture that describes this key.

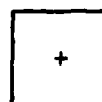


And, once more, you would rate how well you feel the symbol describes the key's actions. Maybe this time you feel that this symbol is not quite so good. In that case, you would place a check mark on the scale like this:

How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable ✓ : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Now turn back to the computer and press the



key to continue with the instructions.

KEY LABEL 1

Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 1.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 1.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 2

Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 2.

How comfortable do you feel with the verbal label you suggested?

Extremely : Uncomfortable : Slightly : Neutral : Slightly : Comfortable : Extremely
 Uncomfortable Uncomfortable Comfortable Comfortable Comfortable

In the box to the right, draw a symbol or picture that describes KEY 2.



How comfortable do you feel with the symbol you suggested?

Extremely : Uncomfortable : Slightly : Neutral : Slightly : Comfortable : Extremely
 Uncomfortable Uncomfortable Comfortable Comfortable Comfortable

KEY LABEL 3

Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 3.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable	Uncomfortable	Slightly Uncomfortable	Neutral	Slightly Comfortable	Comfortable	Extremely Comfortable
----------------------------	---------------	---------------------------	---------	-------------------------	-------------	--------------------------

In the box to the right, draw a symbol or picture that describes KEY 3.

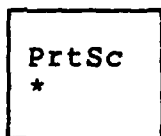


How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable	Uncomfortable	Slightly Uncomfortable	Neutral	Slightly Comfortable	Comfortable	Extremely Comfortable
----------------------------	---------------	---------------------------	---------	-------------------------	-------------	--------------------------

KEY LABEL 4

NOTE: To see this key's actions fully, you will need to press the key twice.

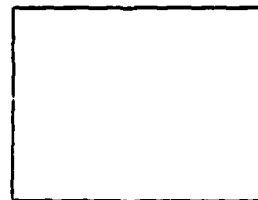


Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 4.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 4.

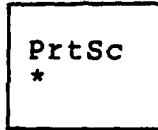


How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 5

NOTE: To see this key's actions fully, you will need to press the key twice.

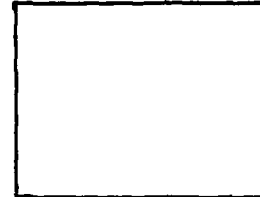


Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 5.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 5.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 6

NOTE: To see this key's actions fully, you will need to press the key twice.

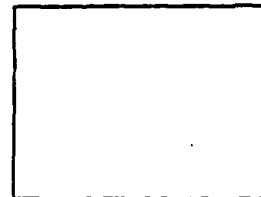


Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 6.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 6.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 7

NOTE: To see this key's actions fully, you will need to press the key twice.



Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 7.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 7.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 8

Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 8.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 8.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 9

NOTE: To see this key's actions fully, you will need to press the key twice.

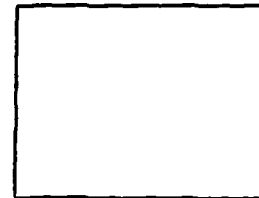


Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 9.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 9.

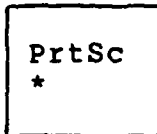


How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 10

NOTE: To see this key's actions fully, you will need to press the key twice.

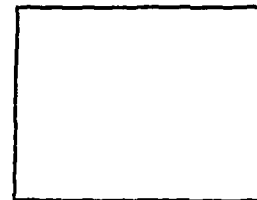


Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 10.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 10.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 11

NOTE: To see this key's actions fully, you will need to press the key twice.



Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 11.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 11.

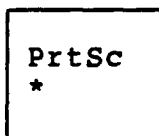


How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 12

NOTE: To see this key's actions fully, you will need to press the key twice.



Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 12.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 12.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 13

Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 13.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 13.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 14

Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 14.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 14.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 15

Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 15.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 15.

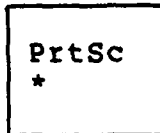


How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 16

NOTE: To see this key's actions fully, you will need to press the key twice.

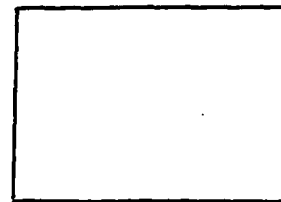


Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 16.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 16.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 17

NOTE: To see this key's actions fully, you will need to press the key twice.



Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 17.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 17.

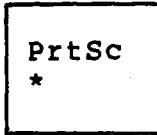


How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 18

NOTE: To see this key's actions fully, you will need to press the key twice.

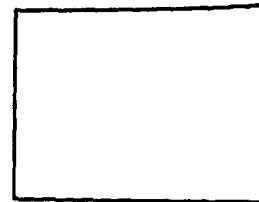


Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 18.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 18.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 19

NOTE: To see this key's actions fully, you will need to press the key twice.

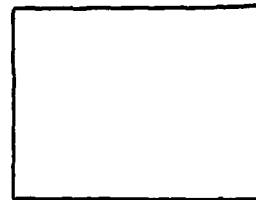


Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes this SECOND key (KEY 19).

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes this SECOND key (KEY 19).

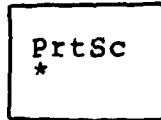


How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

KEY LABEL 20

NOTE: To see this key's actions fully, you will need to press the key twice.

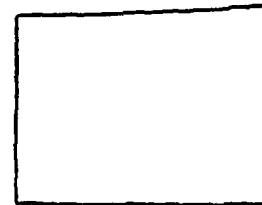


Fill in the blanks below with a verbal label (word, short phrase, or abbreviation) that describes KEY 20.

How comfortable do you feel with the verbal label you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

In the box to the right, draw a symbol or picture that describes KEY 20.



How comfortable do you feel with the symbol you suggested?

Extremely Uncomfortable : Slightly Uncomfortable : Neutral : Slightly Comfortable : Comfortable : Extremely Comfortable

Computer Keyboard Research

BACKGROUND INFORMATION

How old are you? _____

Are you _____ male or _____ female?

Is English the language you use most often? _____ yes _____ no

What is the last grade-level you completed in school? _____

What is your current military rank? _____

How long have you been active in military service? _____

Have you ever used a computer before? _____ yes _____ no

If you have used a computer before, how often would you say you have used it (or them)? (Please check one)

_____ very often (daily or nearly so)

_____ frequently (at least once a week)

_____ seldom (at least once a month)

_____ rarely (less than once a month)

If you have used a computer before, please write down the name or names of the computers you have used (e.g., IBM, Texas Instruments, etc.):

Footnote

¹

Black and Sebrechts (1981) and Streeter, Ackroff, Taylor, and Galotti (cited in Landauer, et al., 1983) wanted to obtain people's stereotypical responses to text-editing tasks. Black and Sebrechts showed college students a manuscript with numerous author/proofreader marks on it and asked the students to provide a one sentence description of each of those changes. Streeter et al. showed homemakers two manuscripts: one manuscript contained errors, the second manuscript showed the same text after the errors had been corrected. Although both sets of authors had the same goal in mind--to elicit what the subjects would naturally name the text-editing events--their results differed. Whereas the label "cross-out" was offered frequently by Black and Sebrechts' subjects, it was offered rarely by Streeter et al.'s subjects.